ISSUE 2
2013

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MESSAGE FROM BRYAN COLLINGS

Welcome to a bumper issue of quality technical content that will assist users of screen and wide format digital systems from every continent with the everyday issues they face during these challenging times. If you picked up this issue at FESPA 2013 and don't usually receive copies, please visit www.specialistprinting.com to order your subscription and join our ever-increasing global readership.

It is now 17 years since I became involved with the screen printing industry which was then largely represented on a Europe wide basis by the organisations FESPA and ESMA. In my previous role as General Secretary of ESMA, I recollect the resistance from traditional screen printing companies to the admittance of digital companies to their ranks as that sector grew. I remember racking my brains before an ESMA board meeting to come up with the term 'specialist printers' to cover screen, digital and pad printing. It faced resistance but is now the term which all of us use and digital is very much a part of our lives.

Perhaps the most remarkable transformation over that period has been the growth of FESPA from a European centric body into an organisation whose highly successful global exhibitions allow them to plough back funds into the industry. This growth continues today and, coupled with the continuing evolution of ESMA, we look forward with interest to see how their structure develops over the next decade during the slow economic recovery. In the meantime, we wish FESPA London 2013 great success and look forward to welcoming subscribers and advertisers alike to stand C28N.

Lastly, do put 27-28 November in your diary for GlassPrint 2013. Along with other autumn events including SGIA '13, Labelexpo Europe, K-Show, CSGIA 2013, FESPA Turkey and Screen Print India, I guarantee GlassPrint is one you won't want to miss (see pages 2-3 for more details).

Bryan Collings, Publishing Director, Specialist Printing Worldwide

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CONFERENCE

www.glassprint.org

EARLY-BIRD DELEGATE OFFER EXPIRES 30 JUNE

If you are a glass decorator or a manufacturer of any type of glass, attending the two day GlassPrint 2013 conference and exhibition will help you add considerably more value to your end product. Until 30 June, delegates registering at www.glassprint.org can take advantage of a reduced 'early bird' delegate fee of only €395, including access to all presentations, exhibition displays, refreshments, lunches and dinner.

Further discounts are available for multiple delegate bookings – call + 44 1342 315032 for more details.

TABLETOP EXHIBITION

In addition to the technical sessions, GlassPrint 2013 will feature a tabletop exhibition of specialist suppliers of equipment, consumables, technology and services. Confirmed exhibitors that will display the latest developments in inks, pre-press technology, printing equipment and supplies include: Dr Hönle, Durst, Fermac, FERRO, Global Inkjet Systems, Grünig-Interscreen, ISIMAT, KIWO, MacDermid Autotype, Machines Dubuit, Marabu, Natgraph, Ormoprint, PPG, RUCO, Saati, SEFAR, SIAK Transfers, SignTronic, Tecno5, Tiflex and Till.

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FEEDBACK FROM GLASSPRINT 2011 DELEGATES THAT VISITED FROM 32 DIFFERENT COUNTRIES INDICATED THAT:

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96% confirmed that the presentations would be useful to their business.

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With an even spread between flat and hollow glass coverage, GlassPrint 2013 will offer delegates ***more presentations*** than ever before. Keynote speakers and industry experts will present the latest information on advanced technologies for glass decoration, including:

TECHNICAL PRESENTATIONS

- 'UV curing on glass: UV-LED versus conventional UV Technology' by Dr Hönle
- 'UV-LED: a new opportunity for organic inks in the glass decoration industry' by Dubuit
- 'Digital glass decoration for indoor and outdoor applications' by Durst

> *"Rather good overview of the glass print technologies."*
> Arnaud Huignard, Saint Gobain

- 'How to generate future market trends in hollow glass printing' by Fermac
- 'Latest developments in user-friendly, over-printable organic inks' by FERRO
- 'Curved surface direct product decoration using inkjet – Challenges and solutions' by Global Inkjet Systems
- 'Managing the change from printing with ceramic enamels to UV inks' by ISIMAT
- 'Functional and visual glass decorating, including glass bonding' by KIWO / Kissel + Wolf
- 'Stencil options for hollow glass' by MacDermid Autotype
- 'New trends in touch screen ink developments' by Marabu
- 'New innovations and technology for drying and curing flat glass' by Natgraph
- 'The surface of glass and ways of its modification' by Ormoprint
- 'Opportunities for special effects to differentiate your products' by Printcolor

> *"GlassPrint event gives the real opportunity to get in a short time the latest updated information regarding printing on glass. Very valuable."*
> Olivier Dangmann, O-I

- 'Various flat glass decoration possibilities today and in the future' by SEFAR
- 'Digital screen making – the future in stencil making' by SignTronic
- 'Digital decoration of glass containers with variable decors at industrial high speed capacities' by TILL

Programme subject to change – visit www.glassprint.org for latest updates.


Dr Johann Overath


Stefan Jaenecke

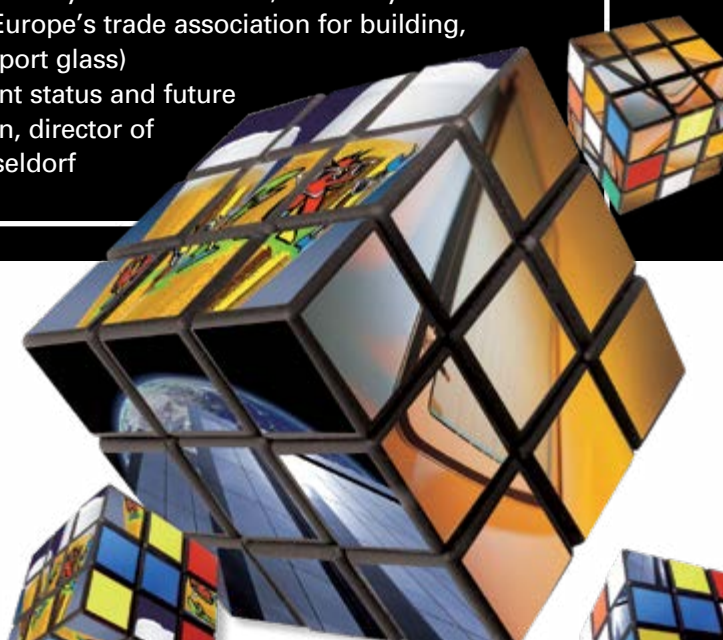

Bertrand Cazes


Birgit Horn

KEYNOTE PRESENTATIONS:

- 'German glass industry – Situation and trends' by Dr Johann Overath, Managing Director of BV Glas (Federal Association of the German glass industry)
- 'Container glass industry – Current and future challenges' by Stefan Jaenecke, CEO of Verallia Deutschland and President of FEVE (the European container glass federation)
- 'Sustainable buildings: the new 'big thing': what does it mean for building glass products?' by Bertrand Cazes, Secretary General of Glass for Europe (Europe's trade association for building, automotive and transport glass)
- 'glasstec 2014 – current status and future outlook' by Birgit Horn, director of glasstec / Messe Düsseldorf

VISIT US AT FESPA 2013 STAND C28N



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NEW LAMPS FOR OLD ...

Sophie Matthews-Paul looks at how the use of LED curing technology is on a steady growth path

It is probably no coincidence that, in this issue of Specialist Printing Worldwide, we are voicing the views of four different specialists on the subject of LED UV-curing. Highly topical, a quick look at patent sites on the Internet shows a tremendous upsurge in the applications being submitted for this technology across a number of industries. Similarly, pundits are forecasting an optimistic CAGR for this technology compared with a significant slowing of the conventional UV lamp market. While this growth relates to many diverse industries, there is no doubt that printing machines feature strongly, both in their graphic arts and industrial versions.

In the wide-format industry sector, the Sun Company in Russia was one of the first who really decided to promote LED UV curing, at the time facing something of a challenge from sceptics in the industry. But, only a few years on, we now see more manufacturers in this segment opting for LEDs, pitching machines incorporating this technology next to platforms that incorporate conventional lamps.

The first notable successes in the display sector came from the likes of Mimaki and Roland, with others including EFI VUTEk, Fujifilm and Screen following. Although doubting Thomases believed that limitations regarding inks, materials, curing capabilities and speed would all be issues, there haven't been any notable compromises thus far; on the contrary, response has generally been positive and enthusiastic, with a greater take-up than perhaps was originally anticipated.

MARKED INCREASE IN LED UV-CURING

Today the doors have opened to manufacturers wanting to reap the benefits gained from UV-curable ink chemistry while removing the problems inherent with mercury arc lamp technology, including their size, heat, lack of life and heavy power requirements. As a result, there is a marked increase in the use of LED UV-curing throughout all areas of the graphic arts and industrial printing. Developers benefit from the compact nature of LED lamps when compared with their counterparts, and this makes them suitable for use in smaller units and in locations where ventilation is compromised.

There are environmental and safety factors to be considered, too. Traditional UV lamps contain mercury which is a harmful chemical element, so to be able to exclude it from the production process is a positive move. Now that LED curing lamps are accepted as being more efficient overall, using lower power and proving to be generally greener with far lower CO2 emissions, we can expect to see them supersede conventional lamps in many industrial situations.

EFI's VUTEk GS3250LX is an example of a successful wide-format printer that incorporates LED curing

Anyone with a passing interest in today's ink-jet industry will be aware of the arguments for and against the LED as a substitute for traditional curing technologies. Lower running costs and instant on/off are complemented by the life expectancy of LED arrays which, unlike their mercury arc counterparts, do not have a finite running time of around 1,000 hours.

HEAT-SENSITIVE AND TRICKY MATERIALS

But, among end users, the greatest positive factor for LED curing is surely the ability to work with heat-sensitive materials and tricky surfaces which haven't cut the mustard with mercury arc lamps. Substrates, such as boards and corrugateds which typically hold moisture, tend to buckle and warp under the heat generated by mercury arc lamps, and this problem has been removed with the use of LEDs. There are even reports of a company in the Netherlands that's discovered it can print onto bubble wrap using its EFI VUTEk GS3250LX.

For most users, running costs and efficiency are key ingredients in their recipe for a desirable printing machine. Those who might have doubted the efficacy of investing in an engine which incorporates LED UV curing should now have growing confidence about this technology. They should also consider the implications of the proposed European ban on mercury lamps and what this could ultimately mean to their businesses.

It is timely that this issue of Specialist Printing Worldwide should focus heavily on LEDs as a viable alternative to mercury arc curing. With Fespa 2013 on the near horizon, visitors have an ideal opportunity to ask the question of manufacturers and see for themselves how well this curing technology functions in practical working situations, both with digital platforms and in screen-printing environments. Wherever UV-curable ink is used, we are certain to see continued growth in LEDs as they continue to challenge traditional lamps, prove themselves in different devices and provide consistent results across even the most difficult materials.

Sophie Matthews-Paul is an independent analyst and editorial consultant to Specialist Printing Worldwide

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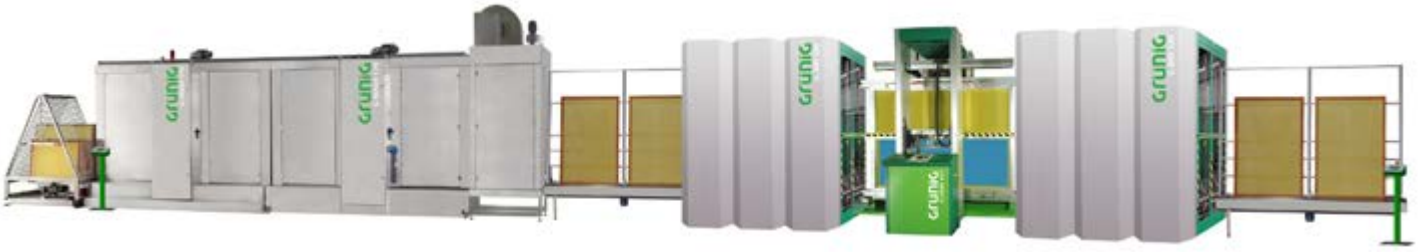

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MAKING THE CORRECT STENCIL CHOICES FOR 3D PRINTING

Oliver Eibeck explains how to optimise the printing of high build inks

Oliver Eibeck

Textile printers need ever-greater reliability to minimise downtime and the costs of waste

CPS Ultra Coat HB is a one pot ultra-fast processing photopolymer emulsion

The printing of 3D effects on textiles is becoming ever more popular and the demands from the fashion industry ever more frequent. As a result, the need to optimise the printing of high build inks to achieve 3D effects has to be met by on-going development of stencil technology. To understand how and why 3D printing can fail, we need to take a closer look at the process itself.

In simple terms, 3D effects are achieved with a high stencil profile of greater than 200 microns and the appropriate mesh, and require an emulsion with high solids content and a high viscosity. However, simply choosing an emulsion based on solids and viscosity specification alone, in most cases, will not lead to optimised or acceptable results.

A purpose designed 'high build' emulsion needs to have very specific photographic properties (reactivity to UV exposure in this case), to ensure the correct degree of cross-linking throughout the very thick stencil layer. It also has to maintain image quality and cross-sectional structure of the 'printing shoulder' to facilitate and control good ink flow. These factors are crucial for the reproducibility of the high build image on the printed fabric. If the emulsion is too slow or too fast in terms of photographic speed, this will lead to an obvious loss of image quality and integrity of the printed image.

What is less apparent is that successful reproduction of 3D effects is heavily influenced by the cross sectional properties of the stencil. A vertical 'printing shoulder' ensures that the high build ink is efficiently and consistently deposited. This is crucial not only in achieving accurate image reproduction but also in maintaining the same quality from the first to the last print in the run.

Continued over

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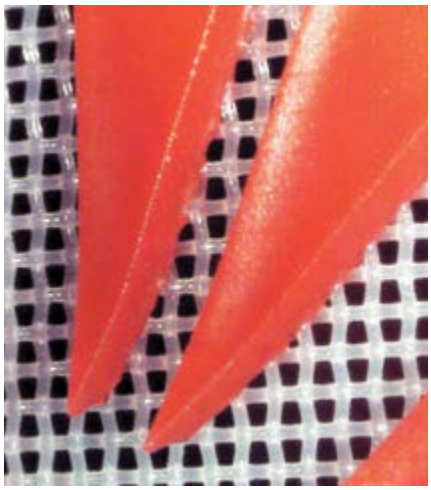


3D effects are achieved with a high stencil profile of greater than 200 microns and the appropriate mesh

OVER- AND UNDER-EXPOSURE

While over-exposure will maximise physical and chemical durability of the stencil, the print shoulder will narrow towards the squeegee side, leading to a considerable reduction in quality of the printed image and a poorly defined edge. This is due to small pockets of ink remaining trapped along the image edges, causing each print to appear slightly different from the next – an effect that is especially noticeable in the case of multi-coloured prints. In contrast, under-exposure leads to expansion of the print shoulder towards the squeegee side and a soft edge to the stencil at the point where it contacts the fabric. This also leads to poor control of the ink being discharged from the open areas and, again, the print quality is not uniform.

To address the very specific requirements of high build stencils, CPS has launched CPS Ultra Coat HB, a one pot ultra-fast processing photopolymer emulsion. CPS Ultra Coat HB has excellent coating quality, and a very high solids content of 47% for achieving both high build and conventional build stencils with the minimum number of coats.

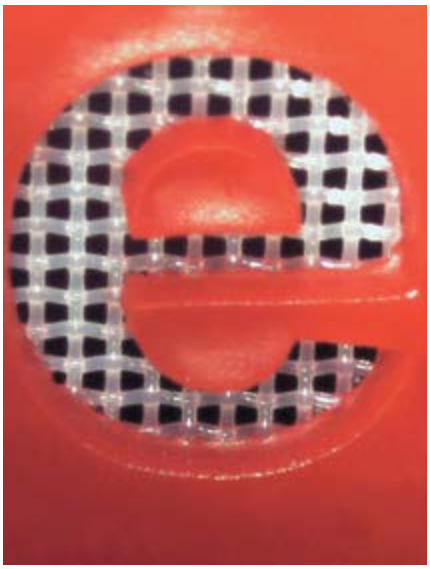
In a busy print shop it is also important to provide stencil solutions that are not only reliable but also relatively easy to achieve without intensive training for the operator producing the screens. The unique properties of CPS Ultra Coat HB allow high build stencils of greater than 200 microns profile to be produced quickly and reliably with wet on wet coating only. By contrast, other stencil emulsions often require additional wet-on-dry coating techniques which add complexity and variability to the process. The technique with Ultra Coat HB requires minimal training for the operator and can be achieved with manual or machine coating.

Exposure times of high build Ultra Coat HB stencils of >200 microns are typically less than two minutes and washout is only slightly longer than that of a conventional build stencil. Comparisons with competitive products show that CPS Ultra Coat HB offers between 25% and 50% higher stencil build-up with the same number of coats, as well as providing superior resolution and edge definition.

CHOOSING YOUR EMULSION

When selecting an emulsion, it is also worth considering how efficient it is to remove after the print run. A quality emulsion will de-coat easily from the mesh and resist 'fusing' after contact with solvents, whereas some emulsions can become extremely difficult to remove and require additional processing and haze removal chemicals.

The market-leading manufacturers of stencil products are working to provide products that bring greater efficiency and quality to textile printing. In the current economic climate it is not enough to provide consumables at the lowest price. Textile printers are demanding ever-greater reliability to minimise downtime and the costs of waste. It is a fact that just one reject garment can cost more than the stencil emulsion itself, so it is a false economy to try and cut costs or make short cuts in quality critical elements of the process. ■



3D effects are met by the on-going development of stencil technology

Oliver Eibeck is International Sales Executive at CPS

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MAKING HEAT PRINTING EASIER

Ulrike André outlines how the right accessories can save time and money

So you have the perfect heat press, cutter, and direct-to-garment printer? You have studied all there is to know about the many heat-printing materials – films, flocks, bling and other special effect vinyls? You have researched digital media? You are eager to get started and produce the most amazing personalised textiles the world has ever seen – only to discover this is not as easy as you thought it would be.

Heat printing actually is still the fastest, easiest way to decorate just about any garment, but as is true with so many things in life – P6 = Proper, Prior, Preparation, Prevents Poor Performance!

A colleague of mine coined this 'formula' during a webinar last year and it sums it up perfectly. Know what you need to know before you start and you'll save yourself a lot of headaches, not to mention hard earned cash.

Here is a summary of "I wish I would have known this before" about the usefulness of heat printing accessories. You'll find that the right accessory can make your heat printing job so much more efficient, and maybe even a little more fun.

CHANGE IT UP – GETTING THE RIGHT FINISH

One of the most versatile and inexpensive accessories that everyone should own is a cover sheet.

Our kraft paper is a brown, treated paper that prevents any dyes or residue from getting onto the upper platen/heating element or garment during application. Kraft paper is most commonly used with CAD-CUT material since it also reduces the amount of static that can generate between the Mylar carrier and heating element. In addition, you can use it to impart a matte finish on certain types of heat transfer material, which is often requested by the customer. It is reusable but must be replaced when it becomes dirty or wrinkled.

Another popular cover sheet is the more durable, reusable, non-stick cover sheet, which also prevents any dyes or residue from getting onto the upper platen/heating element or garment during application. A coated cover-sheet is often the most popular because it is durable and can be easily cleaned with a damp cloth. It leaves a smooth semi-gloss finish on certain types of heat transfer materials.

One of the biggest 'secrets' in the world of heat printing is what is known as The Flexible Application Pad. This thin, silicone, rubber-like textured pad protects items such as zippers, buttons, and snaps from coming in direct contact with the heating element. Because it is made of rubber silicone, it can help prevent such fasteners from melting if they cannot be avoided during heat application. The Flexible Application Pad will also leave a slight texture that resembles a screen-print finish on certain materials. The Flexible Application Pad is also a great way to avoid heat press marks on polyester garments that are more sensitive to heat.

GETTING TRICKY JOBS DONE RIGHT

You may find you need a pad or pillow to enable proper application on uneven items. Coated pillows help prevent marks on transfers heat applied near heavy seams, buttons, and zippers. The pillow allows for an even surface and consistent temperature and pressure throughout the transfer. Coated pillows are available in many popular sizes and are easy to use: simply insert the pillow, adjust the pressure and apply heat for successful results.

Print perfect pads are also designed to elevate the print area on the garment so you can avoid items that can cause uneven pressure, like metal zippers and heavy seams. These silicone rubber-like pads come in different sizes to accommodate the most commonly decorated areas. Use a print perfect pad to achieve perfect pressure throughout the heat application, every time.

PROTECT YOUR INVESTMENT – OPTIMISING HEAT PRESS PERFORMANCE

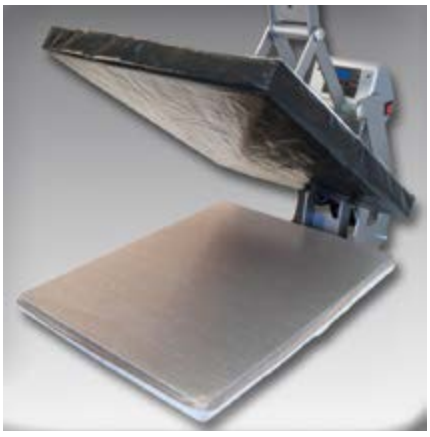
Here are some more accessories you should know about that will not only increase your efficiency, they will also protect your heat press. The quick slip lower platen protectors fit snugly over the lower platen while providing several benefits. When heat printing, you can quickly and easily slide any apparel on and off your heat press. It doubles as a protector for the rubber pad on the lower platen, reducing its wear and tear, and prolonging the life of your bottom platen. The quick slip lower platen protector also helps retain heat, promoting a more even flow of adhesive during the printing process.

The non-stick upper platen protector prevents ink and lint build-up on the upper platen and is especially useful when curing inks on DTG textiles. Use this cover in addition to the quick slip lower platen protector for an even smoother operation process. This protector helps eliminate residue from inks, adhesives, and lint from the upper platen.

Accurate temperature is essential for a perfect print every time. If your temperature is too low when applying heat transfer materials, the adhesive on the material may not activate. Too high a temperature can cause adhesive to squeeze out and leave an outline around the graphic. A test kit can help you to prevent both problems; the strips are designed to check the temperature accuracy of your heat press.

There are platens to accommodate any size textile

Custom platens are able to take on any job



Upper and lower platen covers enhance heat press life

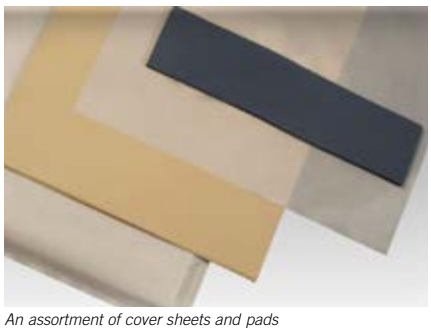
A heat press caddie can save up to 40% production time

HEAT PRINT ANYTHING – HOW TO WORK WITH NON-GARMENT ITEMS

Your customers want more than just T-shirts printed. If you can fit it under your press, you can customise it. That includes shoes, gloves, bags and more. We are in the personalisation industry – it's what we do. It is inevitable that you will get requests to print odd shaped items. Why not use it to your advantage and be known as the decorator who can do it all, no matter how unique the request, while still remaining profitable?

Depending on the item you wish to print, a different sized lower platen can make a big difference.

- Custom Interchangable Platen. You will be pleasantly surprised just how affordable these platens can be and even more surprised at just how efficient they will make your work. Gloves, shoes … no need to pinch, shove and pull them awkwardly over the lower platen if you can have a custom platen built.
- Standard Interchangable Platen. Almost every heat press manufacturer offers them but most users do not think about investing the extra money to purchase them. Just as the custom interchangeable platens, these might be one of the greatest investments you can make for your heat press. By simply purchasing a smaller platen you make heat applying onto children's clothing much easier, smaller bags are no problem and awkward promotional goods are easy. And if the heat press is equipped with a quick release/rotation function your lower platen just turned into a 'buy one get one free' platen – change the direction of the platen in order to accommodate the item at hand.



An assortment of cover sheets and pads

INCREASE OUTPUT – THE ULTIMATE ACCESSORY

Chances are that your heat press arrived in a box. Once you unpack it you have to find counter space in your shop or production area to accommodate it. Depending on the type and platen size, this can seriously cramp your style and take away valuable counter space. If you want to reclaim your counter space you can purchase a heat press caddie stand. You simply place your heat press on top of the caddie and move it to where you need it when you need it there. Furthermore, as it is the case of the Hotronix caddie stand and table top version, you can turn your heat press into a 'threadable' heat press. The space below the lower platen stands free and you are able to spin what ever you are decorating freely on the lower platen – saving a lot of time dressing, removing and re-dressing the platen to complete the heat application of a textile that requires the front and back to be decorated.

SPEND (SOME) TIME – SAVE (A LOT OF) TIME

Granted, it gets easier with experience, however many mistakes and mishaps can be averted from the get-go if only one knows where to look and what to look for.

I could not begin to list how many questions we are asked when exhibiting at a show about how to ease the heat printing application process. And more often than not, there is an easy fix. I encourage you to pick up the phone, or send an email and describe your query to the authorised dealer/distributor or heat printing manufacturer directly. The chances are we have a sound, easy, affordable solution for your problem. ■

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See STAHLS' at FESPA 2013 stand H10N

TAKING DIGITAL TEXTILE ONE STEP FURTHER

Roland Biemans discusses how the right solution can open up new markets for soft signs and banners

Dye sublimation as a print process has been around for many years now, with the potential for its use being campaigned by manufacturers and suppliers world-wide. Whether as a two-step transfer solution or as direct-to-textile option, it has become a process which is either loved or disliked – and that depends on whether or not the business investing in the machine followed the right criteria before purchase and took the best training path.

Companies moving into digital textile printing have come from different sectors of industry, including the graphic arts, sign-making, screen-printing and general digital print. Depending on their background, the experience of these enterprises – and the potential users of the equipment – have different levels of knowledge about dye sublimation as a process. Some might have had bad experiences through deciding to opt for a low-end printer that has been modified for the textile market, others haven't realised that the finishing of the job is as vital as printing it in the first place.

No matter how digital textile printing is viewed, there is no doubt that it is a specialist process when compared with other ink-jet production methods. Nonetheless, when its potential is harnessed successfully, the results are very successful environmentally-friendly alternatives for signs, banners, flags, displays and other wide-format applications. Using aqueous-based inks instead of solvent or, even, UV-curable formulations is always going to be viewed favourably, and this means that the potential for growth in dye sublimation has to be significant. But, without the right solutions that offer productive output, dye sublimation has continued to be regarded often as something of a poor relation in display production. This isn't because of an inferior quality or lack of reliability; the reason is that, largely among the display fraternity, its operation still isn't understood and so it remains fraught with questions and queries which tend to go unanswered.

GREENER PRODUCTION POTENTIAL

On the other hand, with the drive for greener production, businesses are looking increasingly for more eco-friendly processes that don't compromise on quality. Many display specialists are surprised to discover that sublimation dyes result in much more colour vibrancy than alternative processes, particularly UV-curable output which can have a tendency to look a little flat and dull on certain materials.

Not all textile printers are the same, and the decision about which machine to purchase should never be based just on price. An important consideration is the level of training and technical support that users should expect to receive when their textile printer is installed. There are plenty of engines on today's market which have been modified from other ink chemistries to be used with transfer materials and sublimation dyes. Some have been engineered from an existing platform to work with disperse inks and, thus, print direct to the textile.

The new ColorBooster DS handles double-sided printing, in one cycle, onto open and closed fabrics

However, at Hollanders we believe very strongly that, in order for a digital textile printer to perform to its optimum capacity and quality, it is essential that the machine should be designed and engineered from the ground up to work with fabrics. A production platform cannot perform to exacting standards if it has been developed around a compromise, and this applies not only to consistency in standards during the printing process but, also, when the finished application is in situ and needs to be fit-for-purpose or better.

It was recognising the demand for quality solutions that led Peter Hollanders to design and bring to market machines which take into account every principle and idiosyncrasy required to result in successful textile printing. This extends beyond the production platform itself through fixation, washing and heat cutting to give users a truly integrated turn-key option which leaves nothing to chance. The equipment has been complemented by the Hollanders Best Practice Workflow which is an initiative formed by the Digital Textile Print Competence Center which comprises specialist partners that all play a cogent role in optimising the highest quality and greenest output parameters.

THE RIGHT INITIATIVE

This initiative gives customers a comprehensive understanding about how the combination of sustainability and work-flow enables them to have full control over their environmental performance while benefiting from consistently accurate high quality results. This benefits brand owners and other end customers, as well as the PSP, by guaranteeing that greener parameters are being achieved without compromising any part of the production process in terms of standards and durability of output.

But innovation doesn't come quickly or cheaply and, this year, Hollanders has taken up a new investment path to allow it to grow its research and development plans and to expand its production capabilities. This has come at exactly the right time for the company as it plans to roll out additional innovative textile solutions to the market in 2013. These are based on the specific demands of the market and are designed to complement the company's existing ColorBooster systems.

Extending the current portfolio of machines enables a larger number of businesses to benefit from a Hollanders production solution as each new option is designed to cater for specific types

of production and market requirement. The new machines are based on thorough research about user expectations and performance characteristics, with developments designed to offer cost-effective options that bring a realistic return on investment to purchasers.

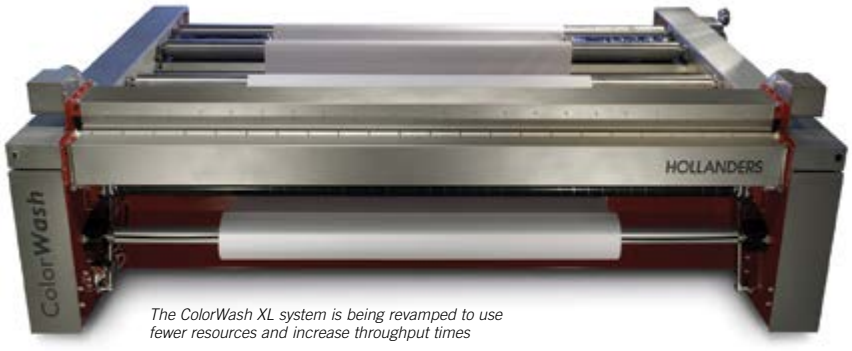
An example is the ColorBooster DS, a totally new concept of digitally printing onto material that, in the past, could only be produced using the screen-printing process. This type of printer now allows for double-sided printing, in one cycle, onto open and closed fabrics. Since it's a completely new approach, opening new markets for the very first time, buyers of equipment do need to get an insight in what the possibilities are.

With the right solution, the most relevant training and the best materials, users of Hollanders printing solutions can generate versatile applications that challenge, and improved upon, many of the displays that currently are produced using alternative types of ink chemistry. With a single, turn-key printing and finishing solution it is easy to take advantage of the marriage between ink and textile, producing high quality, durable results for a wealth of graphics, including typical signs and banners as well as flags, bunting, wall coverings, front- and back-lits and other display applications.

Based on the specific requirements that are now available through digital textile printing on the ColorBooster DS, Hollanders together with its media partners in the Competence Center, has now developed a method by which a digitally printed flag outperforms traditional screen-printed material in terms of longevity, colour gamut and UV-resistance.

The ColorWash XL system is also being revamped, to limit the impact on resources, with less energy usage, less water usage, while increasing throughput times by using new production principles. This type of advanced technological development drives the industry forward in its aim of lowering waste figures and increasing profit margins.

The growth of the digital textile printing market relies on the right solutions to encourage new users to take a more sustainable route to production without sacrificing quality and economics. With Hollanders now growing its portfolio to enable more businesses to benefit from its solutions, new standards of environmentally-friendly output can be achieved. ■



The ColorWash XL system is being revamped to use fewer resources and increase throughput times

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See Hollanders at FESPA 2013 stand C28N

GOING MAINSTREAM WITH DIGITAL TEXTILE PRINTING

Oliver Lüdtke explains the elements required for successful textile production

Oliver Lüdtke

Print companies wanting to enter the market for digital direct-to-garment production need the versatility of being able to work with the many idiosyncrasies found across different fabric types. Quality needs to match the standards accomplished by the screen-process, but set-up and operation must be fast and straightforward. It is recognised that the key elements needed for this industry should encompass the primary considerations of the ink technology, universal material compatibility and a robust, efficient system design, and these are the areas in which Kornit Digital has specialised since the company was founded a decade ago.

Direct-to-garment printing as a viable process first hit the headlines in 2004 and, during the nine intervening years between then and now, there has been a marked increase in both quality and speed. This has coincided with a growth in the awareness of demand for more personalisation in fashion items as well as in general print applications, and it is here that the flexibility found only in digital production continues to excel.

Direct-to-garment printers are becoming essential investments for many different business types, ranging from the high street quick printers through to specialist screen-printers. Apparel decorators of all sizes want to be able to use their existing textile experience to gain market share and to be able to output short-runs, on-demand customised items and one-offs which, hitherto, were not possible to produce without a high financial premium.

SPECIALIST APPROACH

Kornit Digital's specialist approach to the direct-to-garment market has been based on its extensive knowledge of the digital printing industry combined with its own innovative technology. These core criteria have enabled the company to design and manufacture a very specific family of industrial and commercial digital printers that incorporates its NeoPigment chemistry solution, and this has the huge advantage of being suitable for a wide range of fabrics.

The NeoPigment architecture has revolutionised digital textile printing as it removes the limitations imposed with dye-based formulations, resulting in a far more environmentally-friendly and efficient process. With all the benefits and none of the drawbacks of conventional pigmented chemistries, its versatility is unmatched as it is suitable for printing on multiple fabric types. Finished garments have an excellent hand feel, a wide gamut, bright and intense colours, plus long-term durability and washfastness. Its efficiencies mean that production costs are reduced and there is no need for offline pre-treatment.

Aware that the direct-to-garment sector covers a broad range of potential end users, Kornit Digital has addressed the market logically with a portfolio of solutions that starts with a system for small companies with a low yet necessary requirement for quality production. Its mid-range machines cater for more heavy-duty shops that need an industrial-strength printer while, for mass production, there is a duo of top-of-the-range options. These are complemented by an add-on which gives screen-printers the option of a digital element to their carousels, enabling combination applications to be generated that provide the best of both worlds in terms of versatility, special effects and ink finishes.

Kornit Digital's direct-to-garment printers all share a commonality that is based on the NeoPigment process that is unique to the company and its technology and which has been developed specifically for this industry. This stringent level of high quality manufacturing guarantees solutions that are designed for 24/7 operation, and long-term maintenance-free, highly accurate performance.

NEOPIGMENT PROCESS

The NeoPigment process has been formulated specifically for the company's own portfolio, with technology that is based on years of experience and understanding exactly the opacity required, combined with the right vivacity of the colours and the white inks, and a balanced rheology to ensure efficient and smooth flow properties through the print-head nozzles and onto the fabric. In addition to vivid and vibrant results, plus an extended colour gamut, the NeoPigment process provides high elasticity and excellent durability, generating efficient, cost-effective and environmentally-friendly production that is 100% biodegradable and toxin-free, with long-lasting washfastness and light resistance.

The chemistry is designed to react with the pre-treatment system, which is integrated into the printer for a seamless production work-flow. Because Kornit's machines are designed around a wet-on-wet principle, the job can be printed immediately with the pre-treatment, with no need to wait for drying prior

Kornit's Thunder is a stand-alone unit with a choice of pallets

With high production rates, the Kornit Avalanche prints on garments up to XXL size

to the ink being laid down. This enables the NeoPigment process to fixate the inks onto the fibres of the garment, and this leads to a finished print that is completely wash-resistant and with optimal opacity and colour intensity. The other benefits of these NeoPigment water-based inks include a low cost per garment and, with the addition of white, digital printing onto dark fabrics can be achieved. The optimal ink absorbance with the printing surface enhances the application of colours onto both white and dark garments, yet the entire process is environmentally friendly. The inks are Oeko-Tex 100 and GOTS 3 approved, meeting the international standard for the industry, and are completely free from heavy metal, formaldehyde and alkyl phenol ethoxyles ingredients.

DIRECT-TO-GARMENT SOLUTIONS

With its direct-to-garment machines, representing a sensibly priced entry-level solution is the Kornit Breeze. This has been created and engineered to provide copy shops and smaller businesses with a high quality unit that fits perfectly into an existing production environment with its desktop design and compact footprint. Its print area of 35 x 45cm is complemented by an automatic pre-treatment system and single-pass operation which features CMYK plus two channels of white ink applied via six industrial-strength print-heads. Easy to set up and operate, this unit doesn't need any additional compressed air and can be run from a standard desktop or laptop computer.

Also well-suited to smaller companies is the Kornit Thunder which is a stand-alone unit that has a print area of 40 x 50cm and the option of a choice of pallets to handle a variety of garment sizes. Its integrated degassing system enables an uninterrupted ink flow, and up to 80 light and 30 dark garments can be throughput each hour.

The Kornit Storm II is intended for high level production and is a dual-pallet machine that produces up to 150 garments per hour, making it well suited to custom print runs in higher volumes. It has a 40 x 50cm print area and, despite its high productivity levels, is designed to be operated by a single user.

Also designed for mass production, Kornit offers its Avalanche and Avalanche DC Pro

Continued over

The Kornit Storm II is a versatile dual-pallet machine

machines. Both of these models are ideal for users wanting high production rates and the ability to print on garments up to XXL size as well as onto cut panels. The Avalanche is a dual-pallet industrial unit that can output up to 120 dark and 160 light garments as typical hourly production, with a standard image print size of 40 x 50cm and a jumbo option of 60 x 90cm. Its twelve print-head system has eight CMYK and four white channels for superior speed.

The Avalanche DC Pro is the ultimate digital solution of choice for the fashion market. It enables users to print direct to dark garments without a white layer of ink, with its two additional print-heads employing a discharge chemical that removes the dye molecules from the garment, yielding a smooth base for the CMYK inks. This machine enables full and partial discharge printing, with the ability to combine white ink, all without the need for pre-treatment, allowing for faster throughput.

The final member of the Kornit direct-to-garment family is the Paradigm digital add-on station for screen-printing carousels that enables the combination of printing techniques to be used in a single application. Compatible with most manual and automatic carousels, this unit has an image print size of 40 x 50cm. Complex jobs can be created that incorporate screen-printed flocks, foils, metallics, glitters and other speciality inks with multi-coloured digital images, bringing to the fore the benefits of variable data printing and customisation.

EXPANDING INTO ROLL-TO-ROLL

All of Kornit's machines are based on the strict yet innovative criteria that combine to result in tough work-horses that offer the highest levels of reliability and consistency, from the smallest model through to the company's innovative roll-to-roll industrial printer, the Allegro, which has a maximum width of 1.8m. This top-end solution scores because of its ability to be used with most textiles thanks to the innovative NeoPigment process so there are no restrictions in which fabrics can be printed on the machine.

The performance and success of the NeoPigment process has led Kornit to develop the Allegro, a single step solution with an entire printing line in 7m. The Allegro doesn't need fabric pre-treatment or post-print processing, and is proving to be the most advanced system of its kind for textile production. Kornit's own chemical solution removes the need for external process steps and, as it is capable of printing onto multiple textile types using the company's NeoPigment printing architecture, the Allegro is a truly versatile production unit for commercial applications, samples and test runs, and specialist short- to medium-run jobs.

SUMMARY

To summarise, all of Kornit's solutions from entry-level, through mass production direct-to-garment systems, to the innovative roll-to-roll Allegro benefit from the right combination of design and engineering expertise. These criteria are merged with the company's NeoPigment process that has been formulated to produce the most environmentally-friendly, vibrant and colour accurate results on all fabric types, with improved print costs.

There are many direct-to-garment printers available on today's market but none of the alternatives offers the broad range of technological advances that is available in all of Kornit's machines, from its entry-level models through to its industrial roll-to-roll system. The company has successfully satisfied its intention to develop and manufacture solutions which used a single pigmented ink-set suitable for all materials, from cottons to polyester and blends, lycra, viscose, silk, wool, linen, denim and leather, plus many more. ■

Oliver Lüdtke is Marketing Manager, EMEA, for Kornit Digital

The entry-level Kornit Breeze

The Kornit Paradigm is a digital add-on station for screen-printing carousels

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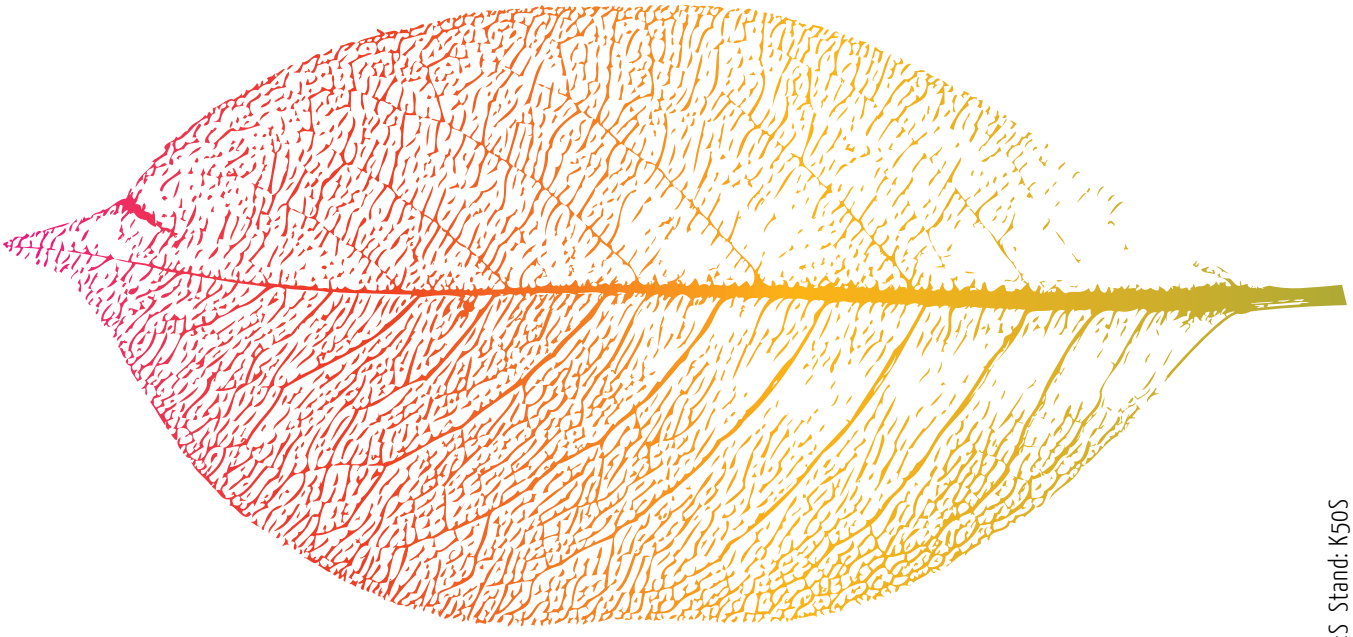

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THE ADVANCE OF SINGLE-COMPONENT EMULSIONS

Dr Roland Studenroth describes SBQ-based screen-printing emulsion technology

In the course of the 1980s, a new technology from Japan edged its way into the screen-printing market. This was the technology of single-component emulsions based on SBQ. The abbreviation SBQ is derived from the product name 'Stilbenium quarternised' and specifically means that a water-soluble, UV light-sensitive stilbene group is chemically bonded with the polyvinyl alcohol (PVA) contained in emulsions (see Figure 1), so that for light sensitising a second component, such as diazo, is no longer needed. Because of it being a single-component product, the SBQ emulsion technology first experienced a boom, but also contributed at the same time to the perfecting of the alternative dual-cure diazo technology. Today both technologies are firmly established in the market and complement each other; i.e. there is dual-cure technology also found in SBQ-sensitised products and, to achieve specific properties, SBQ emulsions can be additionally mixed with diazo compounds.

As mentioned above, the SBQ technology originated in Japan (1) as a development in medicine at Tokyo University. The aim was to create a biocompatible substance (SBQ-PVA), where you can obtain a UV cross-linking reaction to create different density networks to include or immobilize bioactive substances (2) and (3). There are many potential applications, such as in biosensors (blood glucose measurement) (4) and for giving up smoking (5).

In the course of these developments in medicine, it was discovered that the rapid cross-linking of the water-soluble SBQ-PVA and, thus, the insolubility on exposure to UV light, was also suitable for other applications, in particular for screen-printing (6), in which the UV cross-linking of PVA had been in use for a long time. In contrast to the diazo-sensitized emulsions, the SBQ component is not mixed prior to use, but chemically bonded to the PVA (see Figure 1) in the emulsion during manufacturing, so that a one-component emulsion is formed. A variety of emulsions can be produced using an SBQ-PVA base; apart from screen-printing emulsions, there are also screen-printing films, textile printing emulsions for flat and rotary printing, laminating solutions (for screen-printing films), and screen fillers, etc.

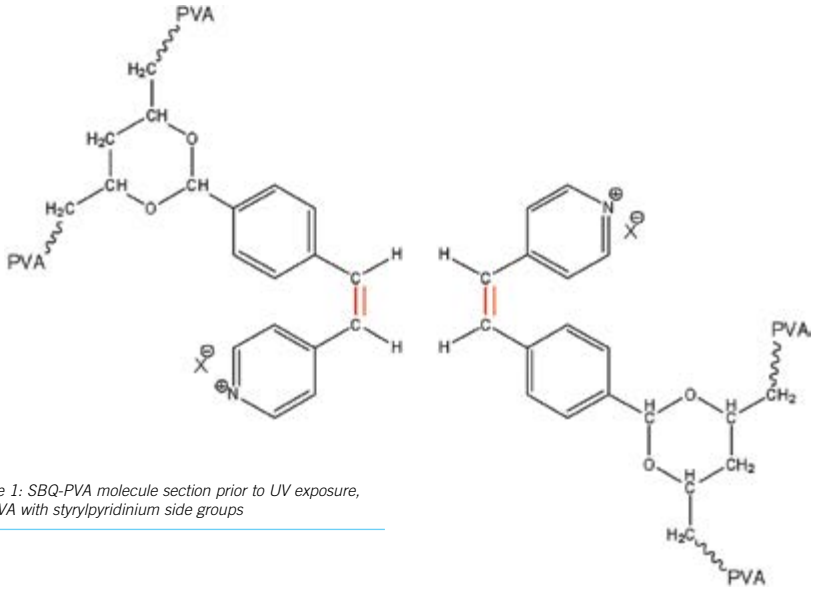

Figure 1: SBQ-PVA molecule section prior to UV exposure, i.e. PVA with styrylpyridinium side groups

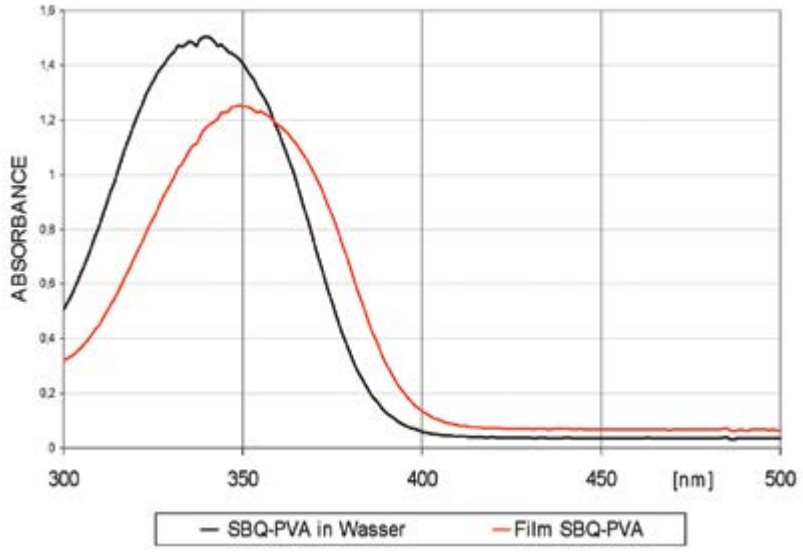

Figure 2: UV spectra of SBQ-PVA in an aqueous solution and as a dry film. With film, you can recognise the sidelobe in the asymmetry, at about 372nm

THE CROSS-LINKING REACTION OF SBQ

The production of SBQ-PVA is not difficult; production possibilities have been frequently described (7). The SBQ-PVA generated (see Figure 1) is highly UV reactive, and definitely more reactive than diazo-sensitised emulsions. For SBQ products, it does not matter, whether mercury UV lamps doped with iron or gallium compounds are used and our own investigations have shown the relevant differences to be marginal.

It is very often debated, however, where the high reactivity of the SBQ-PVA comes from, because the relative short-wave maximum at around 340nm in the UV spectrum does not necessarily prove this point.

When the UV spectrum of SBQ-PVA is, however, more closely studied, you detect an asymmetry in the higher-wave, downward spectrum (see Figure 2), which in recent studies and curve separation has been attributed to a sidelobe at about 372nm (8). This sidelobe is based on a pre-orientation of the SBQ groups in SBQ-PVA and to some extent explains the high reactivity, for to trigger the crosslinking reaction two SBQ groups (see Figure 3) must always join up, which at pre-orientation is already the case.

Continued over

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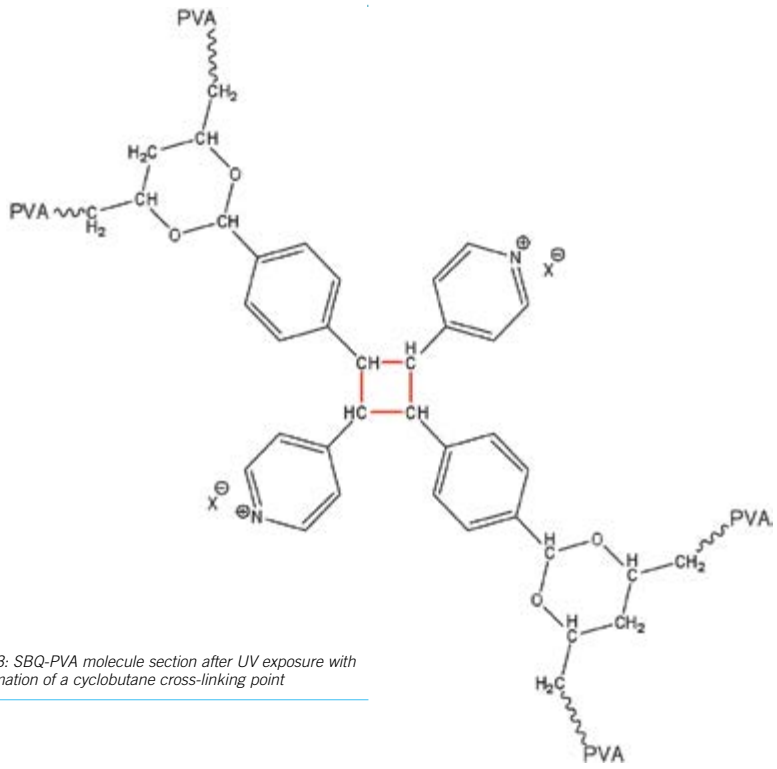

Figure 3: SBQ-PVA molecule section after UV exposure with the formation of a cyclobutane cross-linking point

A reactive UV-maximum at about 372nm in dry SBQ-PVA emulsions and one at about 375nm in diazo-sensitised emulsions also explains that for both types of sensitiser, gallium-doped UV lamps are suitable.

PROS AND CONS OF SBQ EMULSIONS

As already mentioned, SBQ emulsions are characterised by high UV reactivity. This advantage, which manifests itself in relatively short exposure times, can prove to be a disadvantage in some applications. This disadvantage can be seen when some of the emulsion is prematurely part-cured by light reflection on the mesh threads or wires and cannot be washed out, so that resolution and mesh bridging are not ideal.

If polyester fabrics are used, this can be compensated by using dyed mesh, but it is very difficult if highly-reflective stainless steel mesh is used. When very high quality is required, the only things which can help are strong dyeing of the emulsion and the additional use of diazo compounds.

A big advantage of the SBQ emulsion is that it is a single component product. When the viscosity is not too low, they have a long shelf life and do not need to be stirred before coating. Thus there is no waiting time as is necessary after sensitising diazo products and also bubble-free coating is made easier. As a single component material, SBQ products can also be readily supplied in drums and the product can be simply pumped out when required.

Another advantage is its long shelf life; this applies to both water-based emulsions as well as for pre-coated stencils, and especially for SBQ screen films. Note, however, that dried SBQ coatings must be kept completely dark, because even in screen-printing plants with the usual yellow light, the high reactivity can lead to curing (cross-linking) after 20 to 30 minutes.

While SBQ emulsions can be easily formulated for high resistance to solvents, UV and plastisol inks, there are limitations when using water-based print media. In particular, long print runs with aqueous media are problematic. This limitation is based on the bi-functionality of the SBQ cross-linking reaction (see Figure 3), which limits the density of the attainable degree of crosslinking. On top of that, the number of SBQ groups which can be incorporated into the PVA is limited, since exceeding even relatively low concentrations of SBQ groups, the SBQ-PVA becomes insoluble. If optional longer runs with aqueous media have to be printed, then this can be done by adding higher functional diazo compounds.

After the printing process, SBQ emulsions are usually as easy to decoat as diazo-sensitised products. This rule only applies when decoating is carried out relatively quickly after printing. If stencils with SBQ emulsions are stored for a longer period, before being decoated, then there a secondary reaction occurs in the remaining SBQ groups; i.e. cross-linking becomes more intensive and makes decoating more difficult. This is particularly serious if storage was in daylight or even outdoors and exposed to sunlight.

MAIN APPLICATION AREAS OF SBQ EMULSIONS

It is of course obvious that SBQ emulsions have found their main applications, where their benefits can be utilised to their best advantage. The advantage of being a single component product is of a very general nature that favours no specific application. It is different where high reactivity is concerned and therefore SBQ emulsions are usually selected for coating coarse mesh or when large-sized screens are made. Also many CtS (computer-to-screen) applications often employ SBQ emulsions to compensate for weaker UV sources and to allow the exposure unit to move over the screen surface as quickly as possible, thus saving time.

To attain very sharp resolution and reach comparable imaging quality results of diazo emulsions, sensitised SBQ products are often combined with UV-reactive resins including photoinitiators, almost similar to SBQ dual-cure emulsions (see Figure 4). Mostly solvent and UV inks are printed with such products; main areas of application are in graphic screen-printing and in the electronics industry.

Although when compared to diazo-sensitized emulsions, the reduced cross-link density does not support high print runs using aqueous printing media; thus there are also SBQ products for both water-resistant and water and solvent-resistant emulsions (see Figure 5). The purely water resistant SBQ emulsions in particular are used for large-format flag printing screens. In this application, the water resistance is sufficient because print runs in most cases are low. If a specific design has to be printed for a longer run, then there is still

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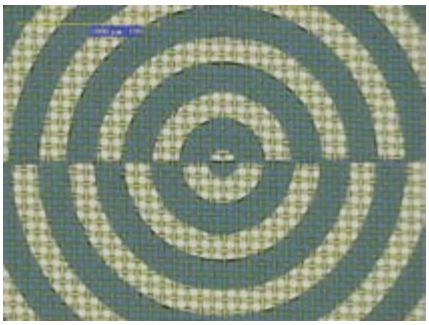

Figure 4: SBQ dual-cure emulsion using Polycol Supraplus as an example, PET mesh 120-31 Y. Coating 2-3

Figure 5: Water and solvent-resistant SBQ emulsion (suitable for CtS) using Polycol Z 540 CTS Violet as an example; PET mesh 120-31 Y, coating 2-2

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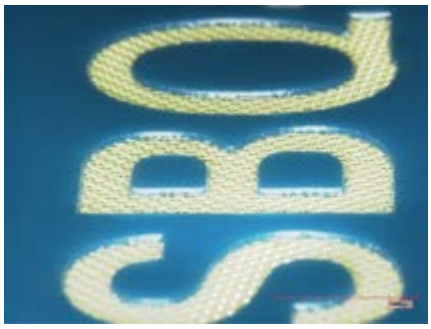

Figure 6: Solvent resistant SBQ emulsion for coarse mesh and high stencil build-up thickness (EOM = 200 µm) using Polycol S 295 HV as an example. PET fabric 32-70 Y

the possibility of additionally cross-linking with a diazo component.

Even when printing with solvent, UV or water-free special printing media, it is often advantageous to use a water and solvent-resistant SBQ emulsion. Such products are dimensionally stable due to their reduced moisture absorption and also more robust during cleaning operations with water-based cleaners. Because of their high UV reactivity, such SBQ emulsions are especially suitable for large format graphic printing, printing on sheet glass and in the textile industry. For all of these applications, both conventional and digital UV CtS exposure systems can be used.

Besides the digital CtS exposure and the production of large-format printing screens, SBQ emulsions can be used to advantage with coarse meshes and for high stencil build-up thicknesses because of their high UV reactivity. Such screens are needed for Braille, touch symbols and special effect prints of various kinds (see Figure 6). Such stencils can be made using SBQ emulsion of a sufficiently high viscosity employing the direct coating process, or vice versa, at low viscosity by squeegee coating with edge blocking. Both coating variations are used, whereby direct coating is more common as it saves time.

Kiwoprint UV 92 is a screen-printable, pressure-sensitive adhesive based on UV-cross-linking polymers

Kiwoprint UV 92 chemically cross-links when exposed to UV-light.

OUTLOOK

The development of screen emulsions based on SBQ-PVA will continue and may even experience a renaissance, especially if the high UV reactivity can be brought even better under control. Only then will its single component property no longer be a negligible advantage.

In addition to serigraphy, SBQ emulsions have also made strong inroads in roll-to-roll textile printing; there are not only chemically-curable products for flat screen-printing, but also single-component emulsions for coating electroplated nickel rotary screens. These are both designed for conventional UV as well as for digital CtS rotary exposure. Such developments in the textile sector will be strongly promoted in future to replace sensitising with chromium (VI) compounds, still practised in some cases.

The stilbene group contained in SBQ-PVA can be modified in principle with other chemical groups and the anion of the pyridinium molecules (see Figure 1) is interchangeable, so that many more variations for one-component emulsions could be envisaged. Due to the easy availability and registration of the styrylpyridinium molecule, we have mainly confined ourselves so far to this species, but it is conceivable that other versions could be developed with a specific property profile and marketed in future. ■

Dr Roland Studenroth is Director of Research and Development at Kissel + Wolf

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THE FUTURE OF DIGITAL PRINTING IS NOW

Dr Mickael Mheidle comments on the development of textile ink technology

Dr Mickael Mheidle.

Digital printing machines are now running at the speed of rotary screen-printers. A consequence of this new reality is that producers involved in the field must change their perception and accept the fact that the promise of digital production has arrived.

During the past two years, many producers in the digital textile printing market have seen that the speed of new digital equipment has increased a hundred-fold from 18.58 square m/hour (200 square ft/hour) to 185.8 square m/hour (2,000 square ft/hour). The new digital equipment is approaching the average printing speed of rotary or flat screen machines. The future of digital printing is now.

Sawgrass closely collaborated with key hardware market leaders to respond to the new demands of these printing systems and initiated the development of extreme speed ink technology for digital sublimation and pigment printing. The extensive R&D program resulted in the development of RMI.

The MS (Italy) LaRio digital textile printing machine

RHEOLOGICAL MODIFIED INKS FOR EXCEPTIONAL PRINT RESULTS

Next generation ink-jet printers for high volume digital textile production present a challenge for ink formulation. Running at speeds exceeding 2,000 square ft/hour, high volume printing requires ink-jet inks with viscosities three to five times higher than traditional ink-jet inks. Achieving increased viscosity can easily be accomplished by adding glycols. However, this common manufacturing approach results in lower colourant concentration, longer drying times and poorly formed dots at the higher nozzle firing rates.

So the question is how can you make an ink that successfully runs in high volume ink-jet printing systems for digital textile production without sacrificing colour vibrancy and image quality? Sawgrass Technologies addresses this challenge with the revolutionary M XTR water-based pigment ink set.

The patented RMI formulation blends the flexible-printing capabilities of the Sawgrass M XTR inks with a rheology modifier (RM) agent specifically tailored for high volume ink-jet printing. M XTR inks make it possible to run at higher ink-jet nozzle firing rates with up to 40% fewer glycols and generate a unique cylindrical jetting characteristic that creates a more consistent ink drop shape. This means that, with M XTR inks, you can produce sharper images with greater colour fidelity and faster drying times than alternative ink products on the market today.

RMI MEANS REALISE MORE INCOME

Combined with the flexible-printing advantages available with the other Sawgrass M ink products, the M-XTR ink set is the premier ink system for high volume digital textile printing requirements. Whether a mill is transitioning from screen-printing or upgrading digital printers to higher volume ink-jet printing systems, M-XTR inks with RMI Technology means you can realise more income from your digital textile printing investments.

M-XTR inks offer new opportunities for high volume digital textile printing. Without time consuming ink changes, it's possible now to print on a wide selection of natural and synthetic fabrics in a single production shift from one ink-jet printing system. The M ink formulation also eliminates the need to wash and dry the printed fabric and saves significant production time, overhead and waste water disposal costs.

Whether transitioning from screen-printing or upgrading digital printers to higher volume ink-jet printing systems, M-XTR inks allow producers to accept a diverse range of customer printing jobs and at the same time complete these jobs faster than ever before.

That's why successful digital textile printers globally use Sawgrass M-XTR inks to realise more income from their digital textile investments.

The M-XTR ink system is available in CMYK, red, orange, violet and blue formulations. In addition to the M-XTR K+ pigment ink set for extreme printing speed, Sawgrass commercialised two sublimation ranges. These are Sublim K+ for extreme printing speed on transfer paper and Sublim Direct K+ for direct to fabric printing. The new digital textile printing machines can be run in a single pass and at maximum printing speed thanks to the new RMI technology.

The critical factors are:

- Drying behaviour of the inks into the fabric: very fast drying is recommended
- Runnability: outstanding runnability is expected by customers as productivity is directly impacted, especially at extreme printing speed.
- Colour sharpness: the RMI helps to increase the colourant content and ensure saturated colours and outstanding sharpness as expected by the textile industry.

The introduction of new digital printing machines running at rotary or flat printing speeds has changed the perception of designers, entrepreneurs and textile printing mills. The availability of textile inks for extreme printing speed running with high yields has provided a capability for securing just-in-time (JIT) production jobs and delivered shorter lead times for orders which were not possible with traditional analogue printing methods. Further economic advantages present themselves when considering the positive cash-flow impact and reduced inventory requirements of an all-digital production work-flow. Significant cost-savings can be realised.

To summarise, it's time to believe that the future of digital textile printing is now. ■

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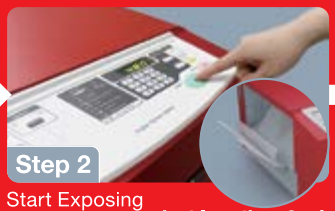

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Step 4
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*Note: When image length 420mm

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LASER FINISHING FOR BUSINESS AND PLEASURE

Alexander Jauker discusses the development of new business segments for commercial print companies

Flexibility, versatility and speed are only three keywords to describe the challenges of today's print service providers and sign and display companies. Key players in the very competitive environment of commercial print have developed from printers to media providers. This new task is also critical for modern sign and display companies. Consumers get offered a very wide range of different media. They choose the form of media they want to consume. Therefore, the logical conclusion must be that commercial printers need to create added value for their end customers. Like this, they will distinguish themselves from the crowd and create additional sales.

PERSONALISATION AND DIFFERENTIATION

When it comes to the field of digital printing, personalisation and differentiation are two main driving forces for business. The possibilities to personalise printed products pave the way to directly address the reader and catch their attention. With UV-curable technology an unimagined number of new materials became part of the production process in the area of sign and display. This perfectly matches the benefits and possibilities of laser technology. A printed sheet of any material only becomes a saleable product with proper finishing.

A laser machine can cut a very wide range of materials like acrylic, paper, cardboard, MDF, polystyrene or foam board. One can create unusual shapes and contours out of synthetic paper, wooden paper or magnetic foil. Personalisation is also a trump card of the laser. In addition to contour cutting intricate shapes with the help of registration marks and a camera system, every shape can be different. Adding value to print by print-and-cut is one possibility; in addition, the combination of engraving and cutting can also generate new services and products. The possibilities are endless.

LASER FINISHING FOR COMMERCIAL PRINT

What's the benefit of laser finishing for commercial print? First, with adding a laser system to their machinery, PSPs are able to do things they couldn't do before. This means they can offer additional services like the contour cutting of printed materials or products – especially for short runs. There is no need to outsource laser finishing jobs any more, no need to pay a sub company and plan additional time for the outsourcing. And there is no loss of control or flexibility with another partner on board.

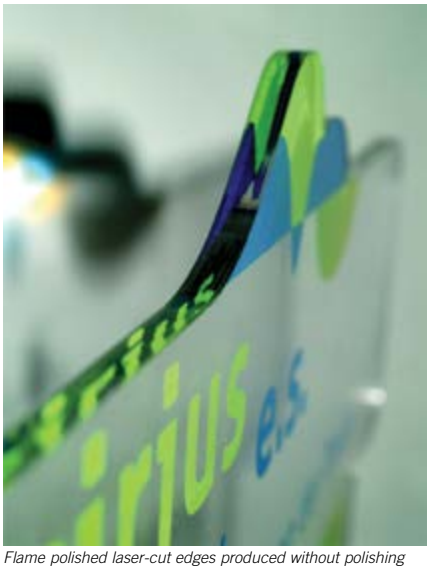
Second, high quality finishing on high value substrates, like premium or synthetic paper, makes the end product even more valuable. A higher margin is guaranteed. With the combination of digital printing and a laser, PSPs can now offer saleable, finished products, not only a printed sheet of paper.

Matthias Achorner, Manager of Printing Innovation Center at Ricoh Germany, describes it like this: "If you marry existing technologies with new technologies you are able to develop totally new target groups. It is our goal to stimulate the creativity of our customers. We want to show them what is possible and how they can delight their customers. We are working with a Speedy 300 and testing laser technology. In my point of view, the possibilities are really impressive." The company is organising experts' meetings in the digital printing industry several times a year to open up room for new ideas. The motto of the series of events is "New business segments!? Identifying new trends, develop innovative ideas, discover profitable niches." A Speedy 300 is part of these events.

Continued over

A printed sheet of paper becomes a product thanks to laser finishing

Contour cutting of printed acrylics



Flame polished laser-cut edges produced without polishing

Trotec's Speedy 400 features a work area of 1000 x 610mm

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Above and right: the Trotec Speedy 400 with Esko Artwork's i-cut Vision registration system

VISUALISE SIGN AND DISPLAY IDEAS

Besides the combination of print-and-cut or engraving and cutting a wide range of materials, a laser system also supports the user when developing or visualising ideas. In the field of acrylic processing, for example, it can play the role of a door opener if the sales representative can present models of point-of-purchase materials. The rapid prototyping capabilities of the laser make it possible.

It is always easier to show what you plan than to describe it. Hendrik Dekkers, director of Dekkers Werbesysteme GmbH in Austria, has been working with a Speedy 500 since 2010 and would repeat the investment at any time: "Our Speedy 500 is meanwhile irreplaceable. We can meet customer requirements and quickly put ideas into practice. There is no comparable laser system on the market like Trotec, the quality is convincing."

CALCULATION EXAMPLES

Let's take a short example. We want to laser-cut the front page of a portfolio book. It should be refined with letters – the company logo. The intricacy in cutting and the very fine details that can be realised turn the catalogue into a premium product and create a high-quality image. The surcharge that customers will pay is immensely higher. Laser finishing can be charged with a mark-up of five to ten times that of a non-finished page. Photo books, writing blocks, diaries and calendars can be made into something very special, personal and unique. Moreover, there is no need to calculate additional costs for dies or any other tools.

When talking about a printed and laser-cut promotional product out of acrylics like a key ring, a very easy rule-of- thumb shows the profit of laser technology. You can add 200 to 300% to the sales prices compared with a non-finished acrylic sheet. The additional costs for laser cutting are minor. This means pure profit for your business.

In both cases, the product only becomes a saleable product thanks to laser finishing.

WE THINK ENVIRONMENT

Knowing that laser technology can open doors for new income streams, print service providers and sign and display companies have to identify the most suitable laser system.

Portfolio book: creative and valuable finishing with laser cutting (www.oliverfarys.de) Copyright Oliver Farys

A good starter when planning to entry in the laser finishing business is Speedy 300 for engraving and cutting. It's the perfect solution for sheets with 700 x 300 mm or A1 format.

When you want to go bigger, Speedy 400 has the perfect working area for A0. With a 1245 x 710mm working area Speedy 500 is the ideal CO2 laser cutting and engraving system for those who process large surface materials and need high speeds and precision. For a print and cut work-flow, you should add EskoArtwork's i-cut Vision registration system. Trotec is the first laser manufacturer offering the i-cut with a micro camera on a mid-sized laser system. Of course, i-cut is also available for Speedy 400 and Speedy 500.

Trotec is the only manufacturer of laser systems awarded EN ISO14001:2004 certification. In 1993 Trotec had already started to implement measures to ensure better energy use. Throughout the entire value-added process, we pay a great deal of attention to the efficient use of energy and the careful handling of raw materials. Our laser technology and the latest filter technology enable us, for example, to offer our customers production systems which protect the environment by avoiding the use of chemicals in the laser engraving, laser cutting or laser marking of materials.

Now, and in the future, standing out from the mass and from mass-produced goods will be the key for success. Individuality and personalisation delights the end customer and results in well-filled order books. ■

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WHY BOTHER INVESTING IN MIS/ERP SYSTEMS WHEN WE CAN BUY NEW KIT?

Steve Richardson sets out the case for increasing profits and performance

Winston Churchill once said: "Men occasionally stumble over the truth, but most of them pick themselves up and hurry off as if nothing had happened."

I mention this famous quote because after some 30 years of very strong evidence that suggests a 'full return on investment' as well as significant on-going improvements in profitability and performance can be achieved by using Management Information System software (MIS), sometimes referred to as ERP, many specialist printing companies still believe it's not for them. So what is the truth?

THE CASE OF A SPECIALIST PRINT PROVIDER

One company who have gone on record in the public domain in the last two years about the proven benefits of MIS usage is UK-based specialist wide-format printer KGK Print. With no sales personnel, the company relies on word of mouth and endorsements from its clients, which include retailers, exhibitions companies and others seeking wide-format print work. For 25 years it consistently invested in quality – machines, buildings, people and their principles – which carried the company a very long way into ensuring its family business was stable and profitable.

However, even with an operation with a modern kit line-up including two Inca flat-bed machines and two VUTEk wide-format 3.2m printers, not all elements of the business were quite so up to date.

"We used to have handwritten job sheets," explains KGK Print partner and eldest brother Graham Pitts. "I also used to type up every detail of every job into MicroSoft Excel manually, and then this information was passed to accounts and they used to retype much of it for invoicing. It was an extremely time-consuming process."

KGK Print chose to invest in MIS software and processes as well as new printing machines

In the end the company decided to research investing in MIS software and changing its processes. It recognised that buying a newer machine, employing more people and getting a bigger building was not the only answer to increasing profitability and performance. So these are the questions KGK Print asked before investing in an Optimus Dash MIS.

WHAT CAN AN MIS/ERP SYSTEM DO FOR MY COMPANY?

In essence an MIS/ERP system is a work-horse designed to automate and help manage daily back-office tasks such as the production of estimates, order confirmations, job bags, delivery manifests and invoices. One of its primary functions is also to give real time visibility on the true cost of all internal and external production processes, plus incisive clear data on bottlenecks, stock levels and, last but not least, profits lost and gained.

WHAT ARE THE COMMON INCORRECT PERCEPTIONS ABOUT THIS TECHNOLOGY?

These perception are that it's over-rated, too costly, difficult to manage and maintain, is for PCs only, is not flexible or scalable enough, it can't handle company specific processes and is just for large organisations with IT departments. The logic is fundamentally fixed and is orientated just around traditional offset litho production principles and the system can only think in terms of the production of sheets, nothing else. For some companies like KGK Print, they know this is just no longer true.

MIS: THE STATISTICS

Says Pitts: "When we had gone live with our chosen MIS provider Optimus in April 2011, we were very confident that we would get some measurable benefits by using the Dash system as we had collaborated extensively on development and configuration requirements. We understood we wouldn't properly know all the numbers until we had a few months' data to analyse; seven months after go live we did. There are some game changing stats in our opinion".

Daily administration savings

Between two of the principle partners in KGK Print and one key member of staff whose function is accounts, the company estimates at least nine man days per month are being saved in reduced administration, job and accounts processing time. Against a mixed hourly wage rate, conservative savings add up to at least £10,000.00 per annum.

Increased sales time revenue gains

For Pitts as one of those partners in KGK, having at least an extra seven to ten hours a week is already reaping rewards in gaining new orders and the means now to forge even stronger working relationships with existing clients. Pitts can, at this stage, attribute at least two new orders worth up to £21,500.00 being gained.

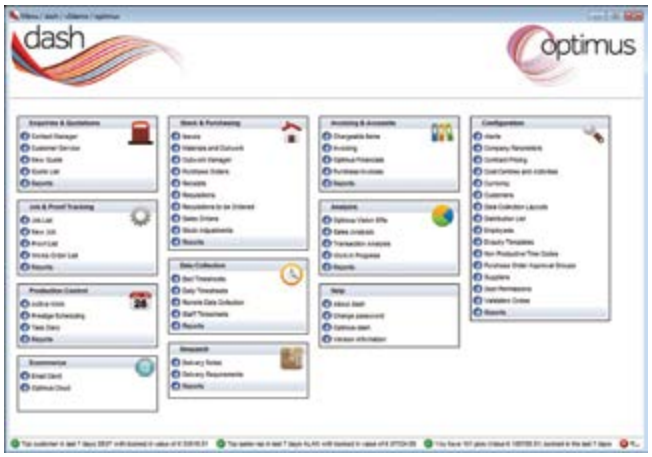
Increased cash flow

Invoices are now, without fail, being created on a daily basis and automatically being posted to accounting ledgers electronically; contrasting that with pre-MIS, a two week or longer delay was not uncommon. Pitts, rightly so, did not want to disclose publicly the exact figures but, with more than 200 to 300 jobs per month going out the door, imagine how your cash flow figure would improve if invoices were sent out at least two-four weeks earlier.

Reduced surplus stock holding and despatch costs

Pre Optimus Dash, KGK Print did not have a stock management system; it relied on common sense and its own eyes to manage the process. Now Pitts conservatively estimates that the company has saved at least £750 per month on managing stock turn better. Wastage especially on ink has decreased, and same day courier and delivery costs are now reduced as well. Simply put, the company now can plan better and, as a consequence, save more money each month due to the extra transparency its MIS provides.

The key performance indicator screen, highlighting overall equipment effectiveness



Optimus Dash MIS, showing available modules plus customised alerts

Per annum saving £9,000

So, for some newer converts using MIS like KGK Print's Graham Pitts, he believes the real question is: "Why would you not invest in MIS to start reaping some of the significant cost benefits and savings?" He can already see at least £40,000 plus of positives to his business in seven months, let alone he is now being able to have uninterrupted holidays. That statistic in his book could even come above the additional savings made.

"Knowing what we do now, we could never go back," states Pitts. "We already have our investment paid for; our cash flow has definitely improved, we have saved huge amounts of time in pricing and processing jobs and, critically, getting invoices quickly out the door on a daily basis. It's what we hoped for when we made our investment. I am convinced over time this will give us an even greater commercial edge to make better decisions about the future of our business."

Who can MIS/ERP work for?

Any company large or small irrespective of what it produces will benefit. The new breed of MIS/ERP providers focus on company specific processes and look to get rid of unwanted steps that don't add value.

Are all MIS/ERP companies the same?

No, far from it. The scope and scale of what can be provided is vastly different. There are huge variations in the levels of functionality, flexibility, service, training, frequency of upgrades, remote and face-to-face support, as well as initial investment and on-going support maintenance.

GETTING A USP BY INVESTING IN MIS

In our competitive global economy, many companies seek to provide a unique selling point, or USP, for their products or services. In order to be different, they often shout about their latest investment in press technology which they often rightly believe will improve quality, efficiency and productivity. It's a logical and obvious step for investors to gain commercial advantage by talking about how they have increased efficiency and output if that piece of kit has delivered those gains. But very rarely is investment in software automation or more efficient processes viewed in the same way, perhaps because they seem less tangible. We would dare to suggest invest in MIS and start improving profits and performance; don't settle for less. ■

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See Optimus at FESPA 2013 stand E3S

IT'S TIME TO SWITCH ON THE LED

Sara Jennings looks at the benefits to be gained with LED UV curing

UV curing using LED instead of mercury arc lamps is slowly becoming mainstream. Customers who have purchased UV LED curing printers have discovered they can print on a far wider range of materials than they could with mercury UV technology. Printer manufacturers are finding they can design smaller devices as UV LED poses fewer heat dissipation challenges and can be used for short runs, print on demand, and even personalisation of objects.

In their January 2013 report strategy consultants Yole Développement found that UV LED technology will become a $270 million business by 2017. It could hit $300 million if a large number of printers migrate to LED as a result of them discovering new applications for their UV curing equipment.

The consultancy firm says that due to the compact form factor of the light sources, their low Total Cost of Ownership (TCO) and environment-friendly composition, UV LED will continue to replace mercury arc lamps. They report a Compounded Annual Growth Rate (CAGR) of 43% by 2017 for UV LED as opposed to a CAGR of just 10% for traditional UV lamps over the same period.

They also state that, with Heraeus Noblelight's recent acquisition of Fusion UV now completed, all major UV curing system manufacturers are now involved in the transition from mercury to UV LED.

Additionally, the European Union has been preparing a recast of their WEEE Directive (more specifically RoHS), in which Article 7 paragraph 6 states that by August 2015 proposals shall be made to completely ban mercury lamps and switches from the European market.

Except for this legislative initiative, the main reason why Yole Développement sees the market explode in the coming five years is the way in which UV LED is opening up new applications that were impossible with mercury arc lamp technology. The consultant not only mentions miniaturized and portable applications such as nail gel curing systems and counterfeit money detectors, but also a vast array of materials that industrial printers and print service providers haven't been able to print on with arc lamp driven devices.

WHY MEDIUM-PRESSURE MERCURY LAMPS ARE OVERTAKEN BY UV LED LIGHT SOURCES

Mercury vapour lamp technology has been around since 1880. Today, mercury lamps are still used in most UV printers. But mercury arc lamps have distinct disadvantages. Except for the use of the highly toxic heavy metal mercury inside the lamps, one of the major disadvantages is the wide range of wavelengths they emit, which includes a lot of infrared. Heat is detrimental for a large number of materials, either because they're flammable, or because they melt or react in uncontrollable ways when heated.

The infrared problem can be solved up to a point. One method is by introducing shutters to block the heat until the point of cure and/or reflectors to redirect or block the infrared waves. Needless to say these 'add-ons' add to the complexity of the printer design.

UV LED light sources emit UV within a very narrow range of wavelengths that infrared isn't included. Consequently, the lamps emit no infrared at all. Materials that would wrinkle, shrink, burn, or otherwise change adversely when exposed to the heat of the mercury lamp, don't budge under UV LED light sources.

This doesn't mean that UV LED arrays don't generate heat. UV LEDs convert about 15 to 25% of the received electrical energy into light. While this is significantly more efficient than mercury lamps, the remaining 75 to 85% is converted into heat, which is why LED arrays still need cooling. This heat is transferred away from the LEDs using either air or liquid cooling methods.

Another disadvantage of arc lamp technology is lifespan. Mercury lamps have a typical lifespan in the range of 1,000 to 2,000 hours. One of the reasons for this short lifespan lies in the 'arcing' of the bulb in order to start the emission of UV (ignition). Each ignition causes wear in the electrodes used to create the arc. The more often the light source is ignited, the shorter the lifespan of the bulb.

The solution to this problem is well-known: the lamps are kept on at all times. A mechanical shutter is used to prevent radiation emission when the lamp isn't actively being used for curing.

Another reason to keep the lamp on at all times is because an arc lamp also requires 'warm-up' time in order for the UV emission to stabilise and reach the maximum UV intensity. Printers must be able to run their machines continuously in order to earn back their investment and make a profit. Waiting several seconds or even minutes, in some cases, for a lamp to warm up in-between jobs adversely affects their capability of running their UV printer 24/7.

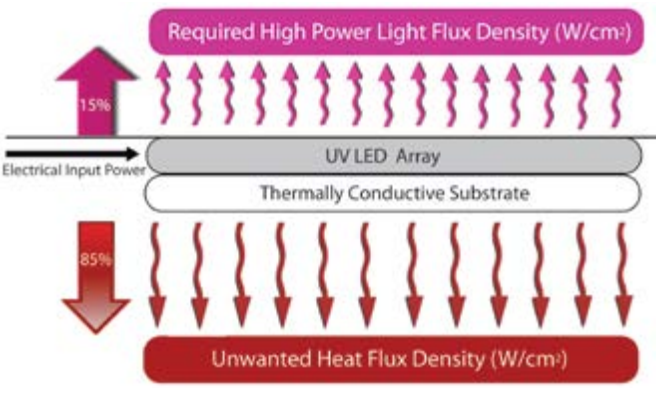
In contrast, UV LED arrays have a lifespan of between 10,000 and 20,000 hours. As LEDs need no warm-up and are instantly on or off, they are only switched on when curing is actively needed. This allows for the lifetime to be stretched further and LED array manufacturers can therefore claim their lifespan should exceed the lifetime of the printer.

PROPER CONTROL AND COOLING

However, for UV LED light sources to reach this respectable old age, manufacturers like Phoseon Technology insist that proper control of LEDs as well as proper cooling is crucial. An important aspect when using air-cooled UV LED light sources is the presence of ink mist

Continued over

The technology benefits of UV LED curing



UV LED energy efficiency

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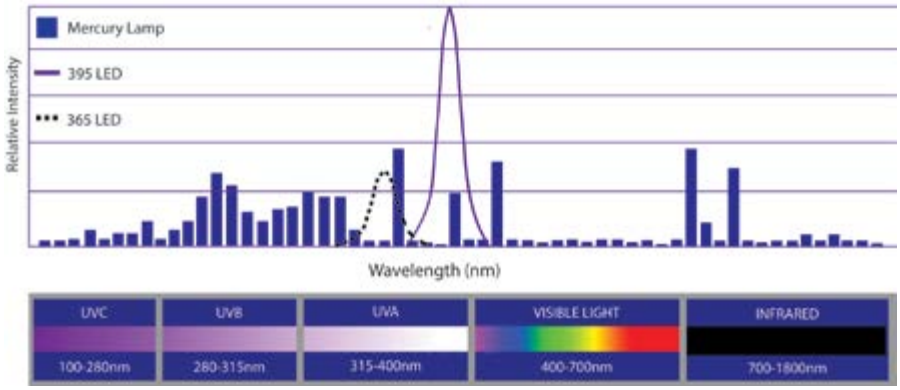

UV LED versus mercury spectral wavelength distribution

near ink-jet heads. Some manufacturers therefore protect and seal their products internally, so ink mist has no impact on performance or lifetime.

It's also important to note that arc lamps will lose their emission quality and power over time, forcing printers to replace lamps before their theoretical end-of-life point. UV LEDs are a solid-state device and if cooled and maintained properly, will continue to produce UV light within 90% of the original intensity at 20,000 hours of active on-time. UV LEDs age and decrease in UV output very slowly over many thousands of hours.

Arc lamp technology costs more than UV LED. It is true that mercury lamps are cheap compared to LED arrays, but the operating cost is many times higher. Mercury lamps consume a lot more electrical power than LEDs, and the printers who are running UV LED today are reporting a power bill decrease of up to 70%. Combined with the expected lifespan of UV LED arrays, the TCO of a UV LED printer is less than the same model printer with a mercury arc lamp inside.

Some people seem to think UV LED printers are slower than mercury lamp driven models. Actually, with the advances in UV LED curable materials, UV LED printers can run just as fast, and in some cases faster, than traditional UV.

With UV LED ink-jets, printers also report that ink heads clog less often and there is less curing outside the substrate as a result of very little stray radiation. In short, the printer stays clean for longer periods of time, and requires less maintenance.

The Firejet air cooled UV LED curing lamp is capable of curing at the highest speeds

THE GOOD CURE AND PEAK IRRADIANCE

If you would insist on curing with inks that cure well with arc lamps, then UV LED would have one important disadvantage; its narrow range of wavelength emission makes traditional UV curing inks unsuitable for creating a good cure. However, as the market of UV LED curing is taking up speed, many ink manufacturers are releasing or have released inks that are specifically targeting UV LED curing.

Nazdar makes a multi-cure ink system that has been formulated to cure with UV LED as well as traditional UV mercury arc lamps. The Nazdar 2300 UV LED screen ink series cures at a peak wavelength emission of 395nm. It is tailored specifically for printing on glass and plastic bottles used in the packaging of cosmetics, household chemicals, etc.

Flint Group partnered with Phoseon Technology for the development of EkoCure inks.

Polymeric Imaging developed the Twilight LED ink system that works with 365/395nm LEDs, is eco-friendly and remains durable when used outdoors for up to three years.

Agfa has the :Agora ink system. These inks are low odour, solvent-free inks that can be applied in one pass. :Agora inks are the only UV inks that are curable by LED light at all available wavelengths and come with a 12-month shelf life from the date of manufacture.

Coates Screen Inks (Sun Chemical group) has a heavy metal free ink mixing system for screen-printing.

Ruco has inks that are UV LED curable on glass bottles.

The ink, however, isn't the only problem. To achieve a tack-free surface, you need to concentrate enough optical energy on the substrate. Mercury arc lamps have no problem with generating energy. A six or ten inch mercury lamp rated at 600W/inch of electrical power consumption can easily produce irradiance in excess of 10W/cm² through the use of parabolic or elliptical reflectors. This is more than sufficient to achieve good surface cure.

UV LED systems work in a different way. They are composed of arrays of individual LEDs. A high-powered LED measures approximately 1mm², and is able to produce up to 0.5W per device. In theory, manufacturers could pack these individual LEDs side by side and would then achieve radiated power densities of up to 50W/cm².

However, problems with cooling, getting the electrical current to each device and efficiently extracting the light created by each, have limited irradiance levels to about 4W/cm². This level isn't sufficient to achieve good surface cure for all applications. For some it will be sufficient, but for others it will not.

The good news is that UV LED light source manufacturers like Phoseon Technology haven't been sitting still. Higher power LED light sources with power densities of up to 8W/cm² have been available since 2009, and Phoseon's FirePower series, is specified to deliver up to 16W/cm² of UV output. Although these high power light sources solve the irradiance problem, they must be used with liquid cooling to manage the amount of heat generated. That, in turn, adds to the complexity of the printer design.

Phoseon's FireJetTM FJ200 light source is what you could call the ideal UV LED system; it achieves power densities of up to 8W/cm² while utilising air cooling to dissipate the heat from the LEDs.

On the ink front in this particular domain, nothing has been quiet either. For example, Nazdar has formulated inks that will cure well with 4W/cm² LED light sources at belt speeds of up to 36.5m/min.

MORE MATERIALS = MORE BUSINESS

In 2011, a Dutch printer who started as a signage company was the first to install an EFI VUTEk GS3250LX. JMC Signmakers has customers all across the Netherlands. The CEO reported his customers have been enthralled when they heard he was going to install this eco-friendly printer, and orders came rolling in even before the printer was installed.

One year later, JMC Signmakers' CTO reports on the expansion of materials he can now offer to his customers. One application he mentions is printing on a sheet of bubble wrap that was to be wrapped around a pillar to be unveiled.

As opposed to scorching arc lamps, UV LED technology enables screen-printing on bubble wrap, athletic tape, shrink wrap

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In particular, glass and plastics are exciting new materials for UV LED driven screen printing. They represent a huge market that printers using arc lamp technology cannot tap into.

Last year, at Glasstec 2012, OMSO debuted its ServoBottle screen-printer. The ServoBottle is a printer that can be hooked up to a complete packaging line, but can also be installed as a stand-alone printer.

The UV LED technology allows this printer to print directly on plastic and glass surfaces. The printer can print up to seven colours and has wet-on-dry printing. It tops out at 90 pieces per minute. Most importantly, though, is that this printer has no problems printing directly on glass bottles, regardless of wall thickness. It's not that you can't print on them with mercury arc lamps, but it is more challenging, again because of the heat.

For screen-printing directly on glass and plastics, CD/DVD and web printing, the Kammann K61 ECO now utilises UV LED ink curing. This technology integrates into the servo-driven press, ensuring a reduction of energy consumption by up to 40%.

The StellarJET ink-jet printer from GCC prints across a wide range of materials such as acrylic, corrugated board, canvas, aluminum, steel, tiles, plastic, wood, leather, glass, mesh fabric, vinyl, etc.

The Mark Andy ProLED UV system used with Flint's EkoCure ink set is aimed at allowing label converters using flexographic processes to print on unsupported and heat sensitive materials, including shrink sleeves and self-adhesive labels.

SMALL IS BEAUTIFUL

While OMSO's ServoBottle printers are quite large industrial printing devices, UV LED allows for a more compact printer design than is possible with mercury arc lamps.

One example of a smaller UV LED printer, is the Amica TL2020/TL2024 series UV LED ink-jet printer. It is suitable for printing on a wide range of 3D objects and other promotional materials.

Even smaller UV LED printers are being introduced. Roland, Mimaki, Graphics One and others are announcing or releasing 762mm wide flat-bed systems.

A typical example of a heat sensitive UV LED Application

These compact flat-bed UV LED printers can be used for printing on 3D objects. Novel applications include smart phone covers, lucite gift boxes, casino chips, pens, awards, photo frames, and anything else you can imagine putting a logo, personal message or advertisement on.

The challenges posed by 3D objects – curvature of surfaces, uneven quality of the material, etc – have been met by several printer manufacturers. Most of the materials these new printers are designed for would warp or shrink when exposed to mercury arc lamps.

Although all inks are toxic to a certain extent, users of small form factor printers can safely use UV LED curable inks that are also eco-friendly. An example of such an ink system is the Series 900UV-LED ink system by Ruco, which is completely free from toxic solvents and which complies with EN71, a European directive for the safety of toys (more specifically, the migration of certain elements).

UV LED also accommodates for enhanced visual appearance. For example, UV LED curable clear inks allow for anything from gloss highlights to faux leather, and even Braille.

Depending on the printer's internal design and its inks' system, UV LED technology makes it possible even to print on gauges and dials, graphic overlay panels for membrane switches and drumsticks, guitar picks and softballs, wine bottles, personalized dishware, mugs, and 3D toys.

Ultimately, even soft objects like wallets, binders and pad-folios can be printed on with UV LED ink-jets. The heat of mercury vapour lamps would see these objects melt or be severely damaged. And as an ink-jet print-head should never come in contact with the item being printed, these objects don't get compressed either.

With all of these new applications, of which some are not even reserved for industrial printers anymore, UV LED is facing a bright future. As with any new technology it takes some time to iron out the wrinkles and flaws. With systems delivering enough irradiance and specially formulated inks being released at a fast pace, it is clear that the market is ready to accelerate the rate at which UV LED curing technology is accepted as the path of the future. With environmental regulators wanting to get rid of mercury as soon as possible, the time to switch has never been better. ■

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LED-UV CURING WORKS

The latest technology enables users to increase the number of applications where UV inks are used. Manuel Zuckerman reports

Much has been said in the last three years about LED-UV modules to replace traditional UV curing units. The reality is more complex of course, as LED-UV and 'conventional' UV will certainly coexist for a long time, each having their own advantages and inconveniences. As well as giving basic information, the following article provides awareness to the printers. It reflects Fimor's experience of bringing such modules to container and hollow glassware screen printers in particular but is not exhaustive about existing and future LED-UV applications in all printed market segments.

LED DEFINITION

LED stands for Light Emitting Diode. It is a solid-state component (chip) that emits light when exposed to an electrical current. Although products using basic LEDs have been developed since the 1960s, they have experienced a growth of logarithmic proportions in the last 15 years following a 'Moore' type cycle, where technology and increasing sales lead to massive decreases in price and improvements to product performance.

Obviously, everyone is aware of the generalisation of LEDs in mass consumer products such as televisions, computer screens, automotive lighting and other 'energy saving' lit devices.

LED-UV

The chemical nature of LED components can be formulated to enable the emission of light in various wavelengths. In recent years, developments have enabled the manufacture of diodes emitting in the spectrum under 400nm corresponding to UV light, generally with peaks near 395nm or 365nm (the most common and efficient ones being around 395nm). Emitters around 254nm are still under development.

Only in the last two years have chips come into the market that can be considered 'high power' (ex: published radiant flux above 6W per emitter), producing enough energy to cure thick layers like screen inks in a reliable way.

A typical LED-UV curing module consists of several single powerful LED emitter lenses, assembled onto a dedicated circuit board (PCB) or an array of on-board smaller LED chips.

The PCB is often designed with a heat sink to avoid excessive heat build at the LED level. LED chips are semiconductors that operate at ambient temperature and excessive heat (example >50°C) can reduce their performance, their lifetime or even permanently damage them.

The light emitting module itself is generally very small, down to the size of a hand soap box for the smallest models which, of course, can be multiplied to cover a larger area. The more power is required, the more cooling becomes an issue. Small units can be air-cooled with a simple, integrated fan while larger, powerful units must be cooled with an external liquid system.

Because UV LEDs are more directional, they do not require reflectors typical of classic UV lamps but a quartz or glass can be used to protect the lenses or focus the emitted light.

The light emitting module is connected to a small size power adapter, which is also used as a control box. That box can be connected and coupled to larger automat like that of the printing machine itself. Modules requiring additional cooling are connected to the liquid recycling system in addition to the power box.

BENEFITS

LED technology has many of the theoretical benefits listed below. They are widely publicised by promoters of this system but the author will discuss later which are really relevant in the glass printing industry.

- Reduced energy consumption.
- Small footprint (much smaller curing head size and smaller power supply units than a UV lamp system with its power cabinet).
- No or little heat (infra red) generated towards the substrate.
- No ozone emission (and therefore no ozone extraction equipment necessary).
- Simplified maintenance; no moving parts such as shutters, long life time of emitters (minimum 15,000-20,000 hours versus 500-3000 hours for a standard mercury lamp).
- Instant 100% availability with on and off mode (no warm up period, no standby required).
- Power can be adjusted in a linear way between 0% and 100%.
- Some models can include zoning (on demand active areas or not).
- No heavy metals such as mercury included in the system.

A complete system including a UV-LED curing head, control cabinet and cooling unit

Continued over

A tube printed with LED compatible Marabu UltraPack LED inks (image courtesy of Marabu GmbH)

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LIMITATIONS

LEDs emit in a single, narrow wavelength, while traditional mercury vapour UV lamps generate light ranging from under 254nm to over 400nm, with several peaks. This results in the difficulty for LED UV emitters to cure photo initiators active over a wide spectrum of wavelength(s). Not every standard ink contains LED UV-compatible photo initiators in quantity sufficient to cure the ink. The corollary to this is that some unreacted photo initiators of traditional ink may remain even if the ink is apparently cured. This means that a careful compatibility test of existing ink(s) is necessary or that users will need to qualify alternative LED-compatible inks. Either way, it can represent a fair amount of re-testing unless starting afresh on a new project.

Note that only few ink manufacturers offer LED-compatible inks, meaning less choice and possibly higher prices. These inks are likely to be more sensitive to visible light and whites may turn more yellow due to the properties of photo initiators active in the higher UV spectrum range.

LEDs UV modules represent an upfront expensive investment for those already equipped with UV systems. Starting prices can be in the €10,000 range for small modules but prices can quickly shoot up with water-cooled, more powerful units (€30,000 or more). Large format units above a metre are still considerably more expensive than standard UV equipment and can reach triple digit figures.

The curing modules need to be placed closely to the object to be printed (a few mm to 1-2cm maximum). This is one of the reasons why UV energy is difficult to measure in a production-like environment and cannot be done with standard UV 'pucks'.

Replacement costs for LEDs in a system are likely to be expensive (minimum 25% of the equipment cost in Fimor systems) but remember, replacement should only occur after a minimum 15,000/20,000 hours of use.

WHEN TO SWITCH

A general consumer argument to switch to LED technology is the 'green' marketing factor, sometimes combined to local regulations (like the recent EU ban on incandescent light bulbs above 25W). However, it is difficult today to measure the real savings in energy induced by the use of LED-UV instead of classic UV lamps for printers because they work differently; an important source of reduction is probably that the LED-UV does not need to be permanently on. It can be switched on and off to consume energy only and immediately when required, whereas a classic UV lamp needs warm up time and is therefore at best in a standby mode between prints.

The non-working time between two exposures to a printed substrate can vary significantly, depending on machine speed and type and so will the energy savings. Models with 'zoning' can also be set up to be active in a limited surface (width of the curing module) only if required, something that cannot be done with a regular lamp. Some people argue that LED-UV can bring up to 80% energy savings but users should be careful of such claims, as every case is likely to be different.

The much smaller equipment dimension (curing head, power cabinet etc) creates de facto a smaller 'footprint', with reduced material use but this argument is less used for the 'green' industry conscience as for its practical machine integration aspect, a key factor to switch to LED UV.

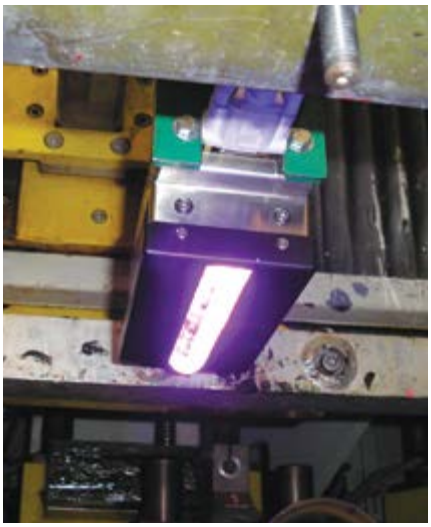
The small curing head makes it possible to come close to the printed material and retrofit equipment that was not originally designed for UV. And for in-line equipment manufacturers having to cope with multiple print stations, it can lead to a significant gain in machine size. This is also certainly one of the reasons why several digital print equipment manufacturers have standardised on the use of LED-UV curing modules that are mounted on the movable printing head itself.

Another straightforward argument for the use of LED-UV is the quasi absence of heat directed to the substrate in comparison with standard lamps. Obviously, this will be a lot more important to heat-sensitive, plastic substrate printers than to glass printers where heat can be an adhesion promoter but container printers can have equipment handling both materials.

Simplified, cheaper maintenance is likely to be a third, tangible asset to LED-UV, as the absence of movable parts (shutters, ozone extraction ventilation etc), no reflectors to clean and the longer lamp life combine to reduce equipment failure and cost of maintenance.

The following recommendations are provided to help potential users decide whether to switch to LED-UV curing:

- Involve the ink supplier(s), if possible in partnership with the equipment manufacturer. It will be essential to understand the photo initiators reaction (qualitatively and quantitatively).
- Conduct thorough tests in real production conditions. Different colours cure differently! It may be possible to use an existing ink line… or not!
- Not all LED-UV equipment manufacturers offer the same performance and characteristics. Different available wavelengths can be specified or combined in a single module. Do not rely on published wattage performance (it is rarely known how it was measured!). Instead, indicate to the LED-UV module manufacturer a required cure speed (in m/min) and the ink thickness depending on print method used, which will guide them towards an air-cooled or water-cooled system.
- Consider combining LED-UV with a regular UV lamp at the end of multiple print stations to achieve the thorough cure of non LED-specific inks.



A UV-LED curing head, mounted on a Dubuit bottle printer (image courtesy of Concept+)

Examples of various size/types of UV-LED curing heads (image courtesy of Concept+)

CONCLUSIONS

Several leading hollow glassware printers have already installed LED-UV curing units as part of a retrofit operation or on new lines. The switch to LED-UV was motivated by one or several tangible technical advantages and not only by the promise of cheaper energy bills. It is certainly worth considering if planning to switch from solvent-based inks to UV inks.

In Fimor's opinion, with reasonable upfront investment costs, small width LED-UV units are likely to make a faster entry in the ink curing market than larger, expensive units. In all cases, a technical evaluation is necessary as the ink, machine and curing module compatibilities are still in their infancy. ■

Manuel Zuckerman is General Manager of Fimor

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INK-JET'S COLD CURING REVOLUTION

Johan Spies explains the background and potential of UV-LED technology

The past five years have seen a revolution in ink-jet digital printing as the development of LED 'cold curing' lamps for UV-curable inks has opened up a much wider range of materials that can be printed onto directly. Mimaki, a respected Japanese ink-jet printer manufacturer, has been a pioneer of LED UV curing since it started development in the last decade.

Inks that are cured by exposure to ultra violet (UV) light have long been used in the graphic arts, for applications ranging from packaging through to industrial processes, originally using 'conventional' analogue processes including lithography, the screen process and flexography.

The first ink-jets to use UV-curable inks appeared around 2001. The process was quickly accepted in the sign and display sector because it can be used on such a wide variety of media, with fast curing, little odour and fewer health and environmental issues than solvent-based inks.

With the most recent introduction of UV-LED lamps, this process is expanding its applications even further, especially for industrial use.

WHY UV CURING?

UV-curable ink is attractive to printers because of its near-instant drying properties plus the ability to adhere to a wide range of papers and plastics. In addition it has environmentally attractive qualities, especially its lack of emission of volatile organic compounds (VOCs).

The ink remains liquid (technically a monomer) until exposed to UV light, when its molecules start to become tangled to form a polymer, which is in effect a solid. This means that the inks remain liquid in the print heads, avoiding most risks of blockage, but once the inks are printed onto the substrate, they can quickly be fixed with no need for special surface coatings or heat drying.

Because the ink does not contain any volatile solvents, it avoids the environmental problems of VOCs, which are increasingly subject to legal restrictions.

UV-curable inks do need some care in handling before curing though; contact with skin or other membranes carries the risk of triggering allergies in operators. Operator contact can be avoided by careful design of ink containers and cartridges. After curing the UV inks are insoluble, so it's possible to print multiple overpass layers to create raised or textured images, or Braille characters.

THE METAL-HALIDE PROBLEM

Originally, metal-halide (MH) lamps were used to cure UV inks. However, they use a lot of energy and radiate considerable heat, they are hard to switch on or off quickly, and it is hard to vary the light intensity. They are expensive yet have a short lifespan.

Mimaki started the development of an ink-jet printer in which light emitting diodes (LED) that emit UV light are used to cure the ink. These UV-LEDs are relatively inexpensive and have long lives compared to MH lamps. They have low energy requirements and can be switched on and off almost instantly. In addition they run much cooler than MH lamps, making it possible to print on a much wider range of potentially heat-sensitive media without distortion.

At Drupa 2008 Mimaki announced the UJV-160, the first LED cured wide-format ink-jet of its kind in the world. Three years later in 2009, Mimaki introduced a large flat-bed LED-UV ink-jet printer, the JFX-1631.

Additionally, in 2010, Mimaki started the production of the UJF-3042, an inexpensive, very compact A3 format flat-bed printer. Thanks to its low temperature LED curing it is both energy-efficient and able to print on a wide range of materials from plastic instrument panel inserts and wood signage, through to three-dimensional objects such as pens and golf balls.

DEVELOPMENT OF THE UV-LED INK-JET PRINTER

It was around the end of 2003 Mimaki came up with the idea of using UV-LED curing. At that time, the development of high power UV-LEDs had only just started and the UV output was still small. The price was about

Continued over

The JFX500-2131 is the latest Mimaki to benefit from LED UV curing technology

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The Mimaki UJF-3042FX is an A3 format LED UV-curable flat-bed printer

500,000 yen for every Watt of UV output (about 4,700 Euros in 2013 prices).

Originally it was feared that the original low-output UV-LEDs would not be suitable for curing ink. However, the subsequent development of two key technologies allowed the development of commercially viable UV-LED printers. One was the appearance of high output UV light emitting diodes. The other was the formulation of high-sensitivity ink that is tuned to respond to the emission wavelength range of such UV-LEDs.

At the start of development the maximum output per UV-LED was only a few milliWatts (mW) to a few dozen mW. Today's output is dozens of Watts or more under air-cooled conditions with the UV-LED module, where several chips are installed. The absorption wavelength of UV ink made for the MH lamp is different to the wavelength emitted by UV-LED. With the development of inks tuned for UV-LED emissions, it became possible to cure the ink completely by using only about 100-300 mJ/cm2 of light energy

ADVANTAGES OF UV-LED PRINTERS

Compared to traditional UV ink-jet printers using MH lamps, LED-UV printers have the following advantages:

1 Low power consumption

The UV-LED unit consumes about 60W of electricity for the lamps plus approximately additional 20W for the cooling fan and the output control circuit. Thus, the total power use for the UV-LED unit is about 80W. The total emission of UV light energy from the unit is about 10W.

By comparison, the total power consumption of the traditional MH lamp is about 1.2KW/lamp. Solely comparing the exposure system, the power consumption of MH lamp is about 15 times as much as the UV-LED curing system.

However, because UV-LEDs can be switched on or off near instantly, printers only need to switch them on during the actual printing cycle. Once a MH lamp has been turned off, it cannot be turned on again until it cools down. Thus, it is generally left on constantly while the printer is in use.

At a 50% operation rate a MH lamp on average consumes more than 30 times as much electricity as UV-LED.

In reality, MH and UV-LED based printers have common elements such as motors, control electronics and ink supply. So the actual difference in power consumption of the printer as a whole would be less. Even so, a printer with a MH lamp consumes three to ten times as much electricity as the one with UV-LED.

2 Miniaturisation

Using UV-LED as the light source for curing means the overall size of the printer can be smaller than a printer using a MH lamp, as there is little cooling or ventilation needed and the power supply unit can be smaller.

3 Long service life

The lamp life of a MH lamp is normally considered to be about 1,000 hours (up to the time of 30% light reduction). If the lamp operates for eight hours per day, it will have to be replaced in 125 days (about six months with 20 operation days per month).

The service life of a single chip with UV-LED is about 10,000 to 15,000 hours depending on the heat dissipation. If a UV-LED operates for eight hours a day, with 10,000 hours service life, it lasts for 1,250 days (about five years assuming 250 working days per year). Since the UV-LEDs are turned off in non-printing mode, the actual service life would be longer. Most UV-LEDs would never need replacement during the service life of the printer.

4 Freely adjustable light intensity

Inside the discharge tube of a MH lamp the electric current must be kept above a fixed value in order to maintain the discharge. This restricts the amount of dimming control available. Because ink-jet printers can vary in speed by two to four times, some sort of dimmer control is desirable to maintain a constant cure regardless of the printing mode. With UV-LED, the light volume can be constantly controlled between zero and the maximum rated output, either by varying the current or selectively switching or pulsing the individual LEDs. So the appropriate intensity is always available.

5 No overheating of media

The glass surface on a MH lamp gets extremely hot. Not only UV light but also excessive visible light, infrared light and far-infrared radiation are emitted, to the point that some types of media can be overheated and distort.

With UV-LED, the temperature of the UV-LED chip itself barely goes up, so the media is not heated. In addition, only UV light that has its peak at 365 to 390nm is emitted. Printers using UV-LED can be used with a wide range of media that would be vulnerable to heat with MH lamps.

6 Ozone-free

UV-LED does not contain any UV lights with the short wavelength components of less than 280nm that belong to UV-C, which cause ozone generation. Therefore, UV-LED does not generate ozone. For that reason, there is no need to arrange a special ventilation to eliminate ozone.

CONCLUSION

The original high cost of UV-LEDs has been reduced by mass production in recent years. Thus the UV-LED technology is not only superior to MH lamps, but the cost is now less. Given their many advantages, the use of UV-LEDs can only increase within the industry. ■

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GREATER EFFICIENCIES AND MORE VERSATILITY

Adam Tourville voices the benefits of LED UV-curable inks

LED UV-curable inks are fast becoming the most popular on the market. They also offer customers the benefits of printing on heat sensitive substrates. LED lamps also can help protect the operator from harmful ozone emitted from mercury arc lamps. With the European Union currently looking at banning mercury bulbs, LED is the clear alternative. With all these benefits, how is the ink affected compared to UV inks?

UV-curable inks and LED-curable inks are similar in structure and formulation. Both ink sets need to have monomers, polymers, oligomers, photo initiators, and additives. Both ink sets share mutual controllable properties such as viscosity, surface tension, cure speed, colour, and pH. Changing these parameters and adding additives allows the ink to be formulated for individual applications. For all that they have in common, the UV-curable and LED-curable ink sets are just as different.

UV-curable inks are thicker in viscosity than LED-curable inks, and cannot work in a low viscosity print engine like an Epson DX4, DX5, DX6, and DX7 print-head. This allows printer manufacturers to develop less expensive LED printers by using a less costly head that has great quality. The drop quality of the thin LED ink is the same as an Epson print-head using eco-solvent inks.

Currently there are a few print systems that are using thin viscosity LED inks. Roland and Mimaki are the two big names that use low viscosity LED ink in an Epson based print system. LED inks can also be just as thick as UV-curable inks and used in the industrial heads that require that thicker viscosity. By adjusting the viscosity and surface tension we are able to adjust the inks to work with each print-head wave form and voltages.

Most UV printer manufacturers have two types of UV inks, a rigid and a flexible; Durst even has three. The rigid UV curable ink is for printing to rigid boards and the flexible UV-curable ink is for roll-to-roll substrates. This can make it difficult for a hybrid printer to have the correct ink for a job.

LED-curable inks have good adhesion to rigid materials and have good flexibility for roll-to-roll applications. This helps the ink not flake or crack when routed or cut. The ink is also flexible enough so that it won't crack when folded or stretched. The LED ink is a good middle ground for printers looking for both flexibility and adhesion to rigid materials.

LED inks cure more efficiently than UV-curable inks with mercury bulbs. This efficiency allows for a better adhesion to materials. UV inks need about 24 hours of post cure period to off-gas fully before laminating and before any adhesion testing. If the ink isn't allowed to post cure it can de-laminate and have adhesion failures. With LED-curable inks curing more efficiently the inks have better adhesion off the printer and better lamination success than that of UV-curable inks.

LED printers have been thought of as slower than traditional UV printers. This stigma has impeded the market growth of these printers. Increased speed can be optimised by using more efficient photoinitiators and formulating the inks around the specific light source.

Every light source is based around 395 to 405nm, but each light has a different curve. Taking this curve and cutting it in half at 50% power gives you a better idea of what the actual wavelengths for that light are; the inks should be formulated around this information.

LED inks have come a long way and currently there are LED inks for every major print-head manufacturer in the market. LED can be adjusted to be used in thicker viscosity print-heads such as Xaar and Spectra, or can be adjusted to be used in thinner print-heads such as Epson and Ricoh. LED inks can also be controlled by surface tension, cure speed, surface cure, through cure, and dot gain. These functions of the ink help to make the ink more efficient when curing by using less energy to cure and better resolution by having optimal surface tension and dot gain before being cured.

LED inks will be the future of the UV-curable printing. They will allow the printer to print to heat sensitive substrates that otherwise are not applicable with UV inks. LED printing also allows for flexibility when printing on a hybrid printer. The ink has properties that are both flexible and rigid. Now there is no need to have to pick between flexible UV ink and rigid UV ink. LED Curable inks have better adhesion to difficult substrates than UV-curable inks. Now printers have the option of using one ink for multiple applications that is a true 100% solid LED-curable ink – an ink for the future that is able to print to both rigid and flexible materials. ■

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FIVE YEARS OF REACH REGULATION

Elaine Campling discusses the European Commission's recently issued general report

ESMA
Driving Print Excellence

The European Commission recently issued a general report on REACH following a review of five years of the Regulation, required by Articles of the REACH Regulation and Article 46(2) of the CLP Regulation. A number of milestones have been surpassed since the REACH Regulation entered into a force, but the chemical industry is currently in the process of complying with the 2013 registration deadline. This registration milestone will see more registrations than in 2010, arguably involving less experienced lead registrants with more limiting data on the substances, due to the volumes involved.

The ultimate aim of the REACH Regulation is the evaluation and control of chemical substances to protect human health and environment. Consequently, a number of

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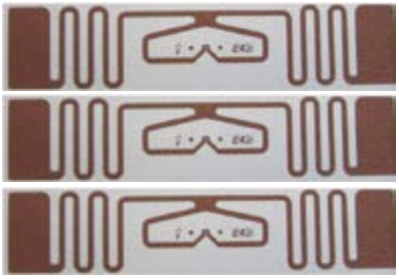

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mechanisms have been derived within the framework of the REACH Regulation to govern the use of chemicals, including restriction and authorisation of use. The decision-making processes generally include public consultation, but many organisations are not aware of the consultation process, which is time limited and the various additions to the listings can be difficult to track.

Annex XVII of REACH contains the list of substances subject to restriction on manufacture, placing on the market and use. A restriction may apply to any substance used on its own, in a mixture or in an article, including those that do not require registration under REACH and can also apply to imports. Substances that may be subject to restriction of use are initially identified by a Member State or the European Chemicals Agency (ECHA).

TWO-STEP AUTHORISATION

The authorisation process is a two-step process, in which Candidate List Substances of Very High Concern (SVHC) are initially proposed by a Member State or ECHA, though other interested parties may initiate the identification of these substances within Member States. ECHA prioritises the substances from the Candidate List to determine which ones should be included in the Authorisation List (Annex XIV). Substances subject to authorisation of use cannot be placed on the market or used after a given date, unless an authorisation is granted for a specific use, or the use is exempted from authorisation.

In keeping track of proposals and possible limitation on the use of chemical substances, interested parties need to check the Registry of Intentions, which is divided into separate sections and includes the Registry of current SVHC proposal intentions, the Registry of current restriction proposal intentions, as well as those that have been submitted.

http://echa.europa.eu/addressing-chemicals-of-concern/registry-of-intentions

Further substance identification and evaluation processes have also been introduced, which includes the Community Rolling Action Plan (CoRAP) and the European Commission Roadmap on Substances of Very High Concern for 2020.

The purpose of the Roadmap is to define a process to identify potential SVHCs. The Commission is unable to pre-judge the final number of SVHC until the relevant information is generated, but have developed a preliminary, 'worst case estimation' of 440 substances to be assessed between 2013 and 2020. 160 substances were evaluated from mid 2009 to end of 2012 with 138 substances included in the Candidate List by end 2012, with a further 80 substances planned for assessment by end of 2014.

THREE YEAR PERIOD OF EVALUATION

The community rolling action plan (CoRAP) specifies substances that are to be evaluated over a three year period by Member State Competent Authorities. The selection criteria include combined hazard and exposure information and tonnage of substances, including the aggregated tonnage of the same substance derived from multiple REACH registrations. This risk based approach means that a hazardous substance with controlled exposure should be of lower evaluation priority, than a less hazardous substance with more significant exposure potential.

The first annual update of the CoRAP for 2013-2015 is now available, following agreement on the substances to be evaluated between 22 Member States. It contains 115 substances of which 62 are newly allocated and 53 are retained from the original CoRAP adopted in 2012. 46 substances are to be evaluated in 2013 by 21 Member States and 46 and 23 in 2014 and 2015 respectively. However, the plan may change in 2014 and in subsequent years, since it will be updated annually.

The CoRAP identifies the Member State responsible for the evaluation of each substance, which will likely result in registrants or downstream users (users of substances) e.g. formulators of mixtures being asked to submit further information to clarify potential risks. The outcome may lead to a number of recommendations, which include restriction or authorisation of use, harmonised classification and labelling, new occupational exposure limit or imposition of national measures.

UNDERSTANDING THE BURDEN TO INDUSTRY

The Commission generally reports that REACH is working well. However, from practical experience the burden to industry may not be so well understood or appreciated by Member States, ECHA or the European Commission. The cost burden to substance manufacturers is reported in various forums to have been completely underestimated by the European Commission and market prices are said to have been driven upwards due to the cost of REACH. The cost of REACH registration has resulted in some companies withdrawing from registration, which has led to intensified market focus and prices, which is identified in the Commission Report on REACH. ECHA fees have recently been revised, reducing charges for small and medium enterprises (SMEs), but larger organisations will be hit with higher fees to compensate. Larger organisations are not so large according to the Commission definition on head-count and financials, so that borderline companies and this sector in general will suffer increased financial burden.

Downstream users must manage the impacts of the various substances lists, which are often considered to be 'Black Lists' of substances and undertake unfamiliar activities in relation to the REACH and CLP Regulations e.g. in communicating information on the new hazards of the substance, or if the risk management advice is not appropriate. It is difficult enough for larger organisations to keep track of the changes and a survey of SMEs revealed that REACH is considered to be one of the ten most burdensome pieces of EU legislation. Without help from regulators, some organisations may crumble under the financial burden and pressure of trying to keep track of and comply with regulatory requirements, which is not limited to the REACH and CLP Regulations.

Whereas the goal of the REACH Regulation is undoubtedly worthy and desirable, more help is required to help industry comply with the requirements and not heavy handed enforcement or excessive charging. ESMA member companies are working together in managing the impacts of regulation, by monitoring and evaluating the regulatory requirements, developing guidance and other compliance documents, both on behalf of their own organisations and for use by their customers. ■

Elaine Campling is Chairman of ESMA's Health, Safety and Environmental Protection Committee and Product Safety Manager for Fujifilm Speciality Ink Systems

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Mimaki goes for Fespa fun theme

Mimaki has unveiled its Fespa 2013 plans with the launch of a fun, customer-based website at MyMimaki.com and a photo competition. To celebrate the unveiling of the website, customers are being asked to get creative by uploading fun images of their Mimaki systems. Dubbed as the "Me & My Mimaki Photo Contest", the competition offers a prize package worth more than 5,000.

"We wanted to use the platform of Fespa to highlight the very exciting results achievable on our portfolio of systems and help customers celebrate the capabilities possible, which is why we have launched MyMimaki.com," says Mike Horsten, Marketing Manager of Mimaki EMEA. "Our solutions help customers be as responsive and proactive as possible but it is their energy and creativity that is vital to ensuring their long-term success."

The emphasis on the fun is continued with the Mimaki-sponsored Fespa Wrap Cup Masters Series and the photo competition's winner being flown to London with two sought-after VIP tickets to Fespa, paid on-site transportation, as well as Fespa gala invites.

On display at the event will be the JFX500-2131 wide-format UV-curable flatbed printer which has speeds up to 60 square m/hour, intended to set a new standard in speed, flexibility, quality and environmental sustainability.

Hybrid's John de la Roche comments: "The Mimaki JFX500 incorporates a brand-new print-head and advanced LED curing. It brings new efficiency, quality and price/performance to the sign and graphics industry and wide-format display market-place. Its advanced head movement control produces an exceptionally high resolution image quality that can produce legible fonts as small as two point."

The JFX500-2131 will be joined by Mimaki's TS500-1800 which has a throughput speed of 150 square m/hour, and is stated to be the world's fastest printer for transfer paper. It is ideal for the textile market.

Also on the show will be Mimaki's UJF-6042 A2-format flatbed printer that builds on the success of the smaller UJF-3042 series, while offering greater versatility and photo-quality print reproduction onto an almost limitless range of media. Its larger print area opens up a whole new world of possibilities for end users in the higher volume production market, where even higher quality is demanded.

Promoting a mix of innovative technologies with social networking, Mimaki's booth will feature its strong product portfolio, with a latex/eco corner, innovative UV-curable printing solutions, creative samples, and an 'aquarium' where creative young students will show visitors job concept/design to realisation. ■

Vastex upgrades presses for 2013

All 2013 models of V2000HD industrial-grade screen-printing presses from Vastex now feature print-heads that are 100% wrench free, allowing precise, independent head levelling, off-contact adjustment, and complete removal or installation of the print-head in seconds. New repositionable locking levers free the head, allowing off-contact and/or six-way levelling adjustments, and then lock the head into its new position. In addition, the lever can be lifted, repositioned and lowered/locked into the new position to operate better in limited spaces that prevent full rotation of the lever and/or for ergonomics.

The print-heads also feature tool-free micro-registration, anti-backlash bearings that eliminate adjustment play, rear clamps of 6.35mm steel, and standard gas spring lifters that prevent sudden breaks.

V2000HD presses are offered in one-station, one-colour table-top models up to ten-station, ten-colour floor standing models. All carry an unprecedented 25 year warranty and are equipped with steel-tube legs, 76.2mm square steel rotor arms, and a heavy-gauge steel rotor assembly with all critical moving parts gliding on ball bearings.

The company also offers a complete line of V1000 entry level screen-printing presses, infrared conveyor dryers, flash cure units, screen exposing units, screen drying cabinets, wash-out booths and complete screen-printing shop systems. There is also a comprehensive range of training classes for entry level, intermediate and advanced screen-printers. ■

Vastex V2000HD screen-printing presses for 2013 feature new wrench-free print-heads

ErgoSoft's TexPrint RIP drives Epson's dye sublimation printer

With its TexPrint RIP proving well-suited for digital textile printing, ErgoSoft has announced that it is a bundle partner for the Epson SureColor SC-F7000 1.6m wide-format dye sublimation system which was launched earlier this year.

"Our goal has always been the development and offering of qualitative and high-value digital printing solutions for the demanding client. With our innovative and production-orientated applications, our customers increase their print quality, colour accuracy and production speed to meet the highest demands in digital textile printing," says Hans Peter Tobler, CEO of ErgoSoft AG.

Features of the TexPrint RIP include step and repeat for flawless vertical and horizontal image repetition, as well as mirroring, and a repeat print option which provides seamless duplication of job copies for economical material use and reduced cut lines. There is also a shortened job RIP time for only one copy.

Color QPC tests and analyses colour output and repeatability, while Color Replace handles replacement of shades within a job using swatch books and named colours. There is the capability for standardised image add-ons, such as eyelet markers, dashed lines, placement of a company logo and canvas wraps, plus tiling and panelling, scaling, mirroring, rotation and cropping of images, duplication, correction of image size and compensation for substrate shrinkage.

The Image Preset feature handles print marks, image add-ons, borders, cropping, tiling and colour management while hot folders simplify mass printing of multiple jobs with the same printer settings, and supports the use of image pre-sets. The pre-flight options enables hard and soft proofing before production, and there is a cost calculator for ink, media and printer costs per job. ■

ErgoSoft's TexPrint RIP is a bundle partner for Epson's SureColor SC-F7000

Marabu says cheers to Fespa

Marabu is giving away two cases of fine wine, aptly named Printer's Ink, on its stand at Fespa. Comments UK General Manager, Karsten Soerensen: "We will be entering everyone who follows us on Twitter at @marabuuk into a prize draw. That draw will be made just before Fespa starts and the winners' names will be displayed on our stand; they will be able to claim their bottle of highly-rated Printer's Ink. We are hoping this prize draw will add even more sparkle to what promises to be a fantastic event for Marabu." ■

Sun Chemical announces its Fespa showcase

Sun Chemical says it is using Fespa 2013 to showcase its extensive offering and commitment to the screen-printing, industrial and digital printing markets. The company is including the newest additions to its Streamline range of after-market inks as well as sustainable solutions, such as its latest product offering for a new sublimation ink to print directly onto polyester media for soft signage applications.

In screen-printing, Sun Chemical says that the graphic display market is rapidly evolving. As well as high performance industrial application industries such as automotive, plastic card and glass decoration, the company's range of inks and consumables has been designed to meet these developing needs, and it states that it is revolutionising the commercial screen-printing industry with cutting-edge inks, supplies and services.

SunJet is developing new technologies for emerging industrial markets to acknowledge the fact that ink-jet printing is growing in all markets, even in the more established sectors such as wide-format graphics. Some of the main opportunities experiencing an increase in ink-jet printing include packaging applications, commercial print markets and partners in hardware development.

In addition, Sunjet works with print-head manufacturers and OEM system integrators to optimise performance on porous and coated paper stocks to develop the speed of print and output quality in markets dominated by offset printing. There is also the development of low migration inks and systems that continues in order to maximise the opportunity for inkjet printing in the label and packaging markets.

At Fespa, SunJet will present its joint development of graphics and industrial ink-jet ink solutions with OEM partners. There will also be enhancements to its portfolio of conventional UV-curable and UV LED-curing ink platforms which are tailored to OEM needs in terms of print speed and press architecture. ■

Diamond Dispersions delivers significant growth

Diamond Dispersions has delivered 32% year on year growth in the first half of its financial year which runs from September 2012 to August 2103. This growth follows the team's record sales during the months of November and December 2012 (£120,000 in November and £72,000 in December when the firm only traded for two weeks as all goods for export had to be despatched by mid-month).

The Sheffield-based ink specialists, founded in 2007 by Peter Callahan and Sue Wright, attribute the growth to a significant increase in demand for their dispersions in the global market of dye sublimation. More than 85% of all that Diamond produces is exported and the company is focused on growing existing markets while developing new market sectors and geographic areas such as Russia and Turkey.

Commenting on the results, director Sue Wright says: "All of our products are created to the very highest standards to ensure unrivalled quality. The Diamond Dispersions brand has gradually become synonymous with quality – we believe it's been key to our increasing success.

"It's taken a huge amount of hard work, time and investment to get to this stage but we believe we have developed the very best dye sublimation inks in the world. We're working with even more OEMs and, after three years of building business in South America and the Far East, we're experiencing particular growth from customers in Brazil and South Korea."

Wright concludes: "Our pigments are also selling well and, again, it's customers who are seeking a quality product that are specifying our pigment dispersions. But our biggest growth has undoubtedly come from dye sublimation and it's this area of the business that we'll continue to expand on over the coming months." ■

Roland DG names Keersmaekers as President, European Sales HQ

Roland DG Corporation has made an addition to its global senior executive team with the promotion of Eli Keersmaekers to a new position as president of European Sales HQ.
He will report to Dave Goward, president of global sales and executive officer for Roland DG.

Keersmaekers is currently CEO of Roland DG Benelux and will continue to serve in that position. In his new role, he will be in charge of sales of Roland DG products for all European countries.

The announcement comes as Roland DG continues to execute its Global One plan designed to strengthen the corporation's leadership positions in the markets it serves around the world. Headquartered in Hamamatsu, Japan, the company's extensive product line provides advanced digital technologies for creative professionals, including wide-format ink-jet printers, vinyl cutters, engravers, 3D rapid prototyping equipment, dental mills and impact printers.

"I have had the pleasure of working with Eli for several years now," Goward states. "I am excited to have him join me on the Global One team as we build on the success of our previous joint venture system to become a truly integrated company world-wide."

"These are exciting times at Roland and I am honoured to serve as president of European sales," Keersmaekers says. "I look forward to working with a talented group of international sales and marketing professionals and the challenge of continuing to grow Roland DG sales."

Keersmaekers joined DG Benelux in 2002 as CFO. In 2006, he became CEO and joined the Roland DG senior executive committee. He has served as Chairman of the European Executive Committee and, most recently, as Chairman of the International Marketing Committee. ■

Huntsman Textile Effects launches Phobotex

Huntsman Textile Effects, a division of Huntsman Corporation, has announced its Phobotex range of fluorine-free rain protection and stain management products. This range is entirely complementary to the existing range of Phobol CP short-chain C6 fluorocarbons, sold under the Teflon trademark and extends Huntsman's comprehensive range of stain management and durable water-repellent products that are fully aligned with many industry benchmarks. These include Oeko-Tex, Bluesign, and aligned with the Zero Discharge of Hazardous Chemicals (ZDHC) joint roadmap and listed chemicals and substances from the Restricted Substances Lists (RSL).

Phobotex is an advanced and comprehensive range of fluorine-free hydro polymers, specifically developed to protect a wide range of textile end uses against rain and everyday stains from ketchup and red wine to mud and grass, The range includes technologies that impart a water-based repellency and stain management effects to textiles for up to 30 washes at 40 degrees C and beyond. With a softer finish compared to other conventional technologies available, Phobotex is suitable for many different end-uses including woven top weights and outdoor sports apparel.

Other products in the new Phobotex range also impart a clever stain release effect after washing, together with quick-drying properties to textiles, wicking away perspiration and enhancing the comfort level for the wearer. It is also compatible with many other effects' technologies, making it a very versatile offer for a wide range of textiles.

Fabrics treated with Phobotex can provide rain and stain protection to a wide range of end-uses from outdoor rainwear and active wear, pants and career wear to more technical fabrics such as awnings, tarpaulins, boat covers, outdoor furnishings and shower curtains. ■

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New Fiery production and proofing software launched by EFI

EFI has launched Fiery XF Version 5, a flexible and scalable high-speed digital front-end and colour management work-flow for wide- to superwide-format production and proofing. This latest Fiery software enables seamless integration with VUTEk and EFI wide-format printers, as well as with EFI MIS/ERP systems.

"Advancements included in our new Fiery wide-format software gives print professionals more power than ever to produce accurate, high-quality work quickly and reliably," says John Henze, Vice President, Fiery marketing at EFI. "The new, customisable interface makes the system easier to use, as it can be tailored to meet each customer's exact production needs."

Print service providers can benefit from a wide range of improvements in imaging, productivity and ease of use, including key features that offer greater value. The combination of Fiery Color Profiler Suite and completely new spot colour tools provide a leap forward in color quality and ease of use and, with more than 50 new wide- to superwide-format print drivers, customers can now use Fiery work-flow and colour management software to achieve the highest quality on all their printers. The software's customisable user interface allows users to tailor Fiery XF to their specific tasks and skill set to reduce error rates.

The modular nature of the software allows customers to tailor the product to their current operation, paying only for the functionality they need now. More than 20 Fiery printer or software options allow customers to add additional capabilities as business needs evolve and budgets allow. An EFI software maintenance and support agreement provides an on-going stream of software releases, including the latest device drivers, plus all minor and major product upgrades. ■

ESC brings its specialist screen-printing technology to Fespa

At Fespa 2013 ESC Europa-Siebdruckmaschinen-Centrum is demonstrating technologies which have been designed for OE and PCB applications, together with long-time partner ATMA, the global industrial screen-printing technology specialist. Its latest screen-printing machines are equipped with modern CCD camera systems.

ESC says that overall machines for optoelectronic applications and displays have been achieving a good sales volume during the past five years with more than 10,000 high-tech units delivered world-wide to producers of industrial goods. Installed in cars, houses and enterprises these products are playing an essential role in everyday life, with mobile phones, flat screens and keypads being commonplace. More and more printed circuits, RFIDs and motor components, are provided with functionality due to the screen-printing technique.

Versatile printing media are available, carbon conductive varnishes are used for flexible PCBs, plugging pastes are applied for HDI circuits and wafers for photovoltaic systems are printed with organic pastes. The design of special screen-printing inks for lighting technology offers a vast amount of potential application possibilities thus demanding highly specialised production solutions from screen-printing suppliers.

ESC says its conventional screen-printing machines are updated in order to guarantee even more precision and control and to meet increased demands. From now on the servo motors controlling the squeegee drive and the screen lift are part of the three-quarter screen-printing machine's basic lay-out.

ESC's presence at Fespa is completed by the Impress, its new stop cylinder screen-printing unit which was first shown at Drupa last year. ■

ESC's Impress stop cylinder screen-printing press

Convenience tool from Agfa

Agfa Graphics latest :Apogee Suite 8 PDF work-flow is now available world-wide, and features a series of new tools for volume printers, allowing them to optimise their production resources. It runs natively on 64-bit Windows Server operating systems, augments the use of the available processing hardware and takes full advantage of virtualisation software. The new web printing imposition takes into account every parameter of a web press to define automatically the best imposition, including cutting, slitting, folding, binding, and much more.

:Apogee 8 also helps PSPs to extend their market reach and gain new customers. It starts with tight integration with :Apogee StoreFront, the cloud-based web-to-print solution that makes it easy to set up internet stores for both printed and non-printed products. Online orders can be downloaded into and processed by the :Apogee work-flow without operator intervention.

"This is great for typical e-commerce environments as :Apogee StoreFront gives printers the opportunity to automate customer communication with jobs of any size, typically the smaller or repeat jobs," states Andy Grant, Global Director of Software, Agfa Graphics. ":Apogee 8 also merges jobs that have similar characteristics, such as paper type or ink sets, to be imposed on one sheet for cutting later. It's another convenience tool offered by :Apogee that can help printers become more productive."

An additional enhancement to :Apogee Suite 8 is :Apogee Preflight, which offers improved colour management. This verifies that colour profiles are attached to all objects and automatically updates incorrect profiles. :Apogee Preflight also makes the necessary adjustments should the output target change. ■

New president at Nazdar

Nazdar has announces the appointment of Richard Bowles as President of Nazdar Ink Technologies. In this role, he will develop strategic sales, marketing, manufacturing, R&D, customer care, quality and continuous improvement plans to enable the company to achieve its objectives for growth and profitability. "One of our top priorities is developing Nazdar's leadership team," states Mike Fox, Nazdar's CEO. "Richard plays a critical role in leading Nazdar Ink Technologies into the future. Today's appointment is the result of his ability to think strategically on a global scale, the respect he has earned from his peers, customers and partners, and his significant contributions to our company." Bowles joined Nazdar in 2002 as Vice President of Marketing and, since 2005, has served as Vice President and General Manager of Nazdar Ink Technologies. ■

Risk of printing ink price increases

According to international printing ink manufacturer RUCO, continuing uncertainty in raw material markets makes it impossible to rule out the possibility of price increases for printing inks during 2013. With a raw materials share of approximately 50% of costs in the printing ink sector, the company has been particularly affected by the reduced availability of raw materials and the resulting higher price level in recent years. RUCO does not expect raw materials prices to relax in the foreseeable future.

In recent years, the company has been able to counter for parts of its increased expenses through company-wide process optimisation measures and by adjusting its product portfolio and raw material procurement channels. In keeping with its motto 'Secure Print Processing', RUCO attaches great importance to maintaining reliable supplies and process security to safeguard its customers' printing operations, even in times of uncertainty. For this reason, material stock levels have already been increased.■

Another Gallus for Turbel

With the purchase of a Gallus EM 510, Brussels-based Turbel NV is increasing its growth success in the markets it currently serves. The company, which has 59 employees and was founded in 1955, is widely known as an exclusive distributor of labelling applications as well as a manufacturer of all kinds of label products. This installation represents the third Gallus press invested in by Turbel. It is equipped with two flexo printing units and will mainly be used for the production of A4 sheet and logistics labels. As the Gallus EM 510 meets the requirements for the production of high volume A4 sheet labels, CEO of Turbel, Roland Cuvelier, and the company's management team decided on another investment from the Swiss manufacturer. The new press provides the company with a professional production solution and strengthens its existing successful partnership with Gallus. ■

The Gallus EM 510 at Turbel NV with (from left) Wim Brunsting, Sales Manager of Gallus Benelux, Roland Cuvelier, General Manager of Turbel with Michel Hawryszkow (Technician), Jean-Luc Bastin (Technical Support) and Karel Siau (Production Manager)

Expansion into digital transfer systems for RhinoTech

RhinoTech has expanded its Digital Transfer Systems division, stating that this growth enables screen- and graphics' printers to build their internal printing services by entering into the digital era. With this step, printers can gain participation in the 'new normal' that is to provide full-circle services to meet needs of all customers. With minimal start-up funds, space and inventory requirements, advancement into digital printing is stellar.

Several options have cleared the product review tests and are available from RhinoTech, starting with SingleJet transfer paper technology offering a refined, one-step heat transfer paper process. Used with an RS1620 swing-away heat press with premier temperature control and an Epson or HP ink-jet printer, the paper can be used to print a photo, flat colour design text, block graphics or spot colours. SingleStep is a self-weeding, heat transfer laser paper that uses a single-sheet process to transfer toner onto light fabrics. Used with Textile Metallic Foil, it solves the problem of printing on dark fabrics.

SinglePrint is a one-sheet transfer laser paper that is weedless and only transfers a solid image to transfer designs and photos to white or light coloured metal, plastic, ceramic tiles and mugs, plaques, glass, leather and various types of card stock. Both SingleStep and SinglePrint can be used on a number of colour laser copiers or colour laser printers although RhinoTech recommends the Go Uno and Oki Data printers for best results. ■

New investment backs Hollanders' growth plans for textile production solutions

Wout van der Wijk is one of the two private investors strengthening the structure of Hollanders

As part of its scheduled growth plans, Hollanders Printing Systems has agreed a new financial strategy which will enable the company to expand production capabilities for its industry leading wide-format digital textile printing solutions. The company has also appointed a commercial director to bring it additional sales expertise.

Private investors Wout van der Wijk and Guy Zwart will strengthen the financial and operational structure at the Eindhoven-based independent system specialist. This bolsters the manufacture of the ColorBooster wide-format printer platform, complemented by the ColorFix fixation unit, the ColorWash washing machine and the ColorEdge cutting unit. New additions to the series will be launched throughout the year.

This new investment support is timed perfectly as Hollanders rolls out its latest technology for the textile production sector and, to help increase its market presence, the two entrepreneurs from The Netherlands are to play an active part in the running of the company. Wout van der Wijk is an expert in strategic business management while Guy Zwart has considerable knowledge of wide-format digital printing systems. These investment partners also bring practical support to Hollanders, which will be invaluable for the company's continued planned growth and development of additional solutions.

The entrepreneurial activities provided by van der Wijk are strengthened by Zwart's position as the new CEO of the company. Peter Hollanders becomes CTO, which enables him to concentrate on the realization of new technologies for use in digital texting printing, and additional appointments include sales, service and support staff.

"Both investors saw immediately the enormous potential in the rapidly growing market for digital textiles, and fell in love with the Hollanders concept," states Peter Hollanders. "We are ready to expand with exciting new machines for 2013 to complement the existing successful ColorBooster XL solution, and this injection of funds and practical involvement from van der Wijk and Zwart is perfectly timed for our future plans."

Additionally, Hollanders Printing Systems has appointed Kees van der Looij as Commercial Director of the company, responsible for developing sales throughout Europe and internationally. Previously with Zünd, and with an in-depth knowledge of the wide-format digital printing market, his expertise will drive increased presence of ColorBooster textile solutions throughout the display, sign-making and décor sectors.

Roland Biemans, Sales and Marketing Manager at Hollanders Printing Systems, states: "Kees joins the company at an exciting time as we are now anticipating steady growth that will enable us to bring our ColorBooster solutions to a wider market area. The addition this year of new products to our portfolio will broaden our customer base and give more businesses the opportunity to benefit from a truly productive turnkey textile production solution, so additional sales support is essential." ■

Ultraflex appoints Bieger as Eastern Territory Sales Manager

Ultraflex Systems has announced that Bill Bieger has become new Eastern Territory Sales Manager for Connecticut, District of Columbia, Delaware, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Virginia and Vermont, and Ontario, Canada. Bieger is an innovative sales and marketing executive with over 20 years in colour output solution sales in the software and ink-jet industries. He is well versed in building relationships and partnerships with media, software, and printer manufacturing companies. His broad knowledge of the many facets of the digital printing industry will aid in the support needed to educate, assist and elevate his customers and partners toward growth and success. ■

Digital CtS exposure

G4 Automation has introduced a digital computer-to-screen (CtS or DtS) exposure machine. The Expo LD system, which includes all hardware and software, uses advanced digital filmless blue laser diode exposure technology for economic and top quality production of stencils for flat textile, industrial, and graphic screen-printing applications.

This new system has a stable mechanical construction, with the run speed of the exposing head being the same in both exposure directions and free from any vibrations of the machine or the loaded mesh surfaces. The advanced linear motor drive and power control provide a vibration free movement, necessary for perfect stencil registration and especially to ensure moiré free screens.

Customers have the choice of different resolution settings in the exposure run, through control software, and the screen is vertically and bi-directionally exposed with the distance between the optics and stencil surface being maintained constantly, thanks to a laser autofocus control system. Before each exposure, the power of each diode is checked and balanced by an automatic software control system. This gives the guarantee of constant UV energy output and exposure conditions at any time.

The light emitted by diodes is taken to the stencil surface through a high precision optic by means of the high efficient glass fibres, with minimal energy loss, and the exposure is performed by means of round light dots, instead of square pixels, for better line sharpness and perfect half-tone images. The precise laser distance control systems ensure a perfect exposure sharpness and control of the automatic frame and printing image positioning on the mesh surface.

These and additional features make it possible to expose perfectly any standard emulsions and also any standard capillary films, even thick film types. There is remote assistance service via high speed Internet connection that allows the manufacturer to provide immediate technical assistance, when required.

Expo LD can be connected to automated screen processing lines from many different manufacturers. Exposed screens do not need any additional post-treatment to increase the mechanical or chemical resistance of the exposed emulsion, and this makes the stencil-making process simpler and much easier to de-coat.

With digital imaging, exposure and hardening processes are simultaneous, and there is higher resolution and better quality, compared with conventional film exposure. It is possible to print and expose half-tones from 2% to 96% tonal value. ■

Durst launches concentrate on speed and quality

Durst used ISA in Las Vegas to launch its new Rho 1012 and 1030 wide-format printers, both of which are available as upgrades from the existing Rho 1000. In addition, the company introduced the Variodrop print-head technology for its P10 series of UV-curable ink-jet platforms.

Durst claims that the Rho 1012 is the first 12 picolitre flat-bed printer in its class, made possible by latest Quadro Array print-heads. The very small drop size provides 1,000dpi print quality while maintaining productivity of up to 490 square m/hour. It offers users the ability to meet the quality and volume requirements normally reserved for offset printing but with the media flexibility only possible with digital ink-jet printing.

According to Durst, the Rho 1030 is the fastest fully automated flat-bed printer available. It is capable of production speeds of up to 1,000 square m/hour without compromising the quality of print. This printing speed and full automation with auto-loading and unloading tables makes it ideally suited to incorporation into an industrial production line. Also available are both roll-to-roll and roll-to-sheet print options that enhance the machine's media flexibility.

To increase productivity of up to 25% for all the Rho P10 series printers, the benefits of Variodrop are refined greyscale technology, with improved productivity and image quality. "With Variodrop the output of the P10 250 is up to 240 square m/hour featuring an ink drop size of 15 picolitres," explains Michael Lackner, Marketing Manager of Durst. "In addition, the quality is improved for both 15 picolitre and 10 picolitre printing, including better colour gamut and even smoother solid colours." ■

MAINTAINING CREATIVITY IN SPECIALIST PRINTING

Dr Christian Maas looks at the latest product innovations and thoughts for international market development

With more than 180 employees, Kammann Machinenbau is a leading producer of equipment for special printing applications. Based at Bad Oeynhausen, Germany, the company is described by many as a 'hidden champion' in various niche markets. Dedicated to glass and plastic hollowware decoration, as well as roll-to-roll web printing, the company has built up a broad and loyal customer base around the world. Combining complex material transport with a variety of surface conditioning techniques has become the company's core competency and innovation focus. Today, fully automatic, CNC-controlled container decoration machines with up to twelve colours are the cornerstone within Kammann's product portfolio. Bottles, glasses, flacons, tubes, cartridges, jars, cups, candles – this is why customers appreciate having a Kammann printer.

Kammann Maschinenbau is headquartered at Bad Oeynhausen and employs more than 180 people.

The company's origins date back to 1955, when Werner Kammann started to manufacture glass vials from tubing for the pharmaceutical and flavouring industries, before offering machines to produce ampoules and vials. The necessity to achieve a permanent print on its medical and pharmaceutical packaging was the motivation that led subsequently to the in-house development of screen-printing machines.

The Kammann family lived in the town of Bünde, Westfalia, where Bünder Glas (today part of the Gerresheimer group) is sited. This glassmaker ordered the first machine ever built by Kammann to produce glass vials.

Starting with four employees, the company delivered its 50th decoration machine in 1958 and completed its first manufacturing hall in 1961. The 500th machine was delivered a year later, before a second manufacturing hall was completed in 1964. Today, a sales office is maintained in China, as well as a sales and service company in the USA, with world-wide representation in place. Joint Managing Directors for the business are Matthias Graf and Dr Christian Maas.

Werner Kammann led the organisation for more than three decades, his open-mindedness towards innovation becoming an essential part of the company's culture. This included its success with plastic as well as glass packaging, at a time when screen printing was the only process to apply a durable decorative effect on a plastic bottle.

ORGANIC GROWTH

Substantial organic growth was achieved over the years by focusing on premium packaging and streamlining designs and production in order to remain competitive. Although conditions are constantly changing, markets have become increasingly competitive, price-

Kammann's K15 universal screen-printer features CNC controls

The semi-automatic K10 screen-printer has gained world-wide renown

The company's original location in 1955

Kammann's first assembly hall was completed in 1961

Today's modern assembly site

sensitive and affected by such mega-trends as sustainability, flexibility and digitisation.

Every year, apprenticeships are offered to young men and women for various professions, including mechatronic and mechanical technicians. In most cases, these highly educated people stay with the company for the long-term, staff turnover being minimal. Furthermore, Kammann invites university students to join as part of a structured internship programme.

Individual training schemes are provided on a regular basis for existing technical and commercial staff to keep abreast of constantly changing requirements. Within the current workforce, the average span of employment service exceeds 20 years. In some instances, however, more than 45 years' service has been recorded.

SETTING INDUSTRY STANDARDS

In the late 1950s, Kammann's first fully automatic container printer – K5 – was an example of ground-breaking technology at that time. Its introduction opened the door to industrial production for many customers. Like the Volkswagen Beetle, the K5 paved the way for the company's future growth and its current strong reputation. Several decades later, the K14 and more recently the K15 models followed suit, each setting industry standards at the time.

The company continues to be flexible, precise and innovative, creating innovative products, achieving a positive reputation in the market and continuing to be optimistic about the performance of economies throughout the world. With its six lines, the K15 CNC product group currently represents the company's biggest seller in hollowware, with Russia, North America and Europe representing Kammann's main markets. However, South East Asia and China also represent important opportunities for market expansion. In roll-to-roll the company most recently introduced its new K6X web printer for converting and functional printing applications.

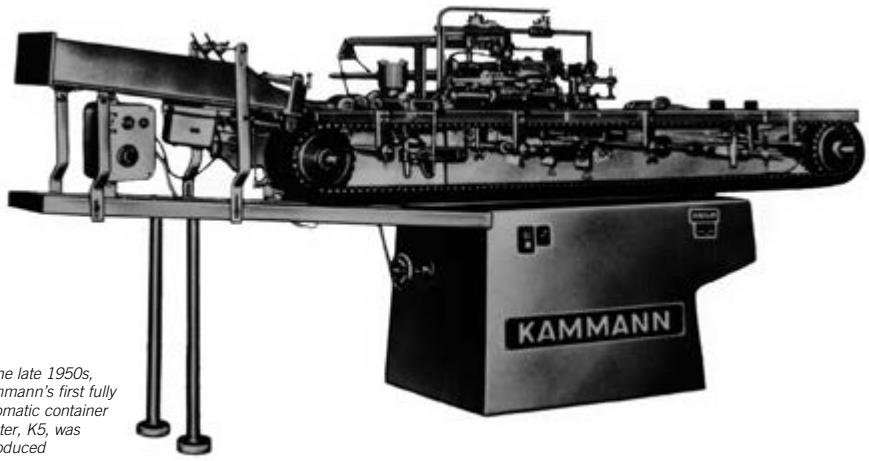
The key to good customer relationships is to provide the best products, tailor-made to customer demand. A strong international sales and service network is helping the company to achieve these goals, both steadily and sustainably. This local knowledge is proving to be especially helpful when dealing with cultural differences from one country to the next.

FROM A CRAFT TO AN INDUSTRY

Container direct decoration, especially glass decoration, has undergone a fundamental shift from a craft into an industry in recent years. We have encountered automation, sustainability and flexibility, as well as innovative management techniques and forms of organisation. The variety of available packaging materials and technologies has increased, allowing customers to choose from a wide range of packaging solutions and decoration techniques.

There is a positive future for premium packaging, especially directly decorated. Productivity and quality of direct decoration has improved tremendously, for all materials. Today, we see more and more packaging designers as well as printers to re-discover the opportunities of direct decoration. Like their customers, suppliers to the industry have to be adaptable to volatile market conditions if they are to exploit available opportunities. Here, our creativity is especially valuable; it is an advantage that cannot simply be copied.

Collectively, Christian Maas believes that glass and plastic decorators and their suppliers would do well to think digital and find ways of reducing their emissions/carbon footprint, while also implementing strategies to retain their most skilled and valued employees. ■



In the late 1950s, Kammann's first fully automatic container printer, K5, was introduced

Dr Christian Maas is Joint Managing Director of Kammann Maschinenbau

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THE LONG-TERM BENEFITS OF IN-LINE SCREEN-MAKING AND CTS TECHNOLOGY

Andreas Ferndriger answers a series of questions about automatic frame production

Q: Does an automatic line mean I have to standardise on a few frame sizes and throw away my existing frames?

A: It is no problem using the existing frames but the following points are important to get all benefits and to reduce costs:

- The quality of the frames must be good. We recommend aluminium frames with slope profiles to obtain and keep good mesh tension with no torsion etc.
- If you standardise the frame sizes you get fewer problems, improved handling and work-flow, better automation and, therefore, lower production costs and more output.

Q: Will automatically produced screens affect the following and, if so, how?

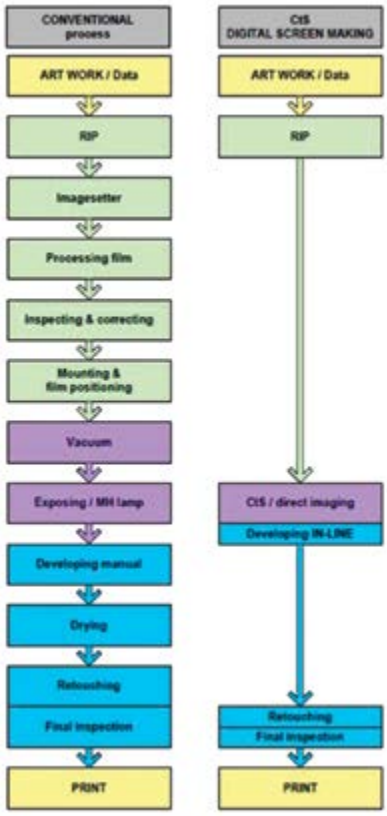
A: Automatically produced screens based on CtS (computer-to-screen) direct exposure and automatic developing and drying offer many benefits. Such in-line units are running with a minimum of manpower and produce screens during lunch, breaks and overnight.

A key benefit is the automatic registration of the screens and dramatically lower retouching work.

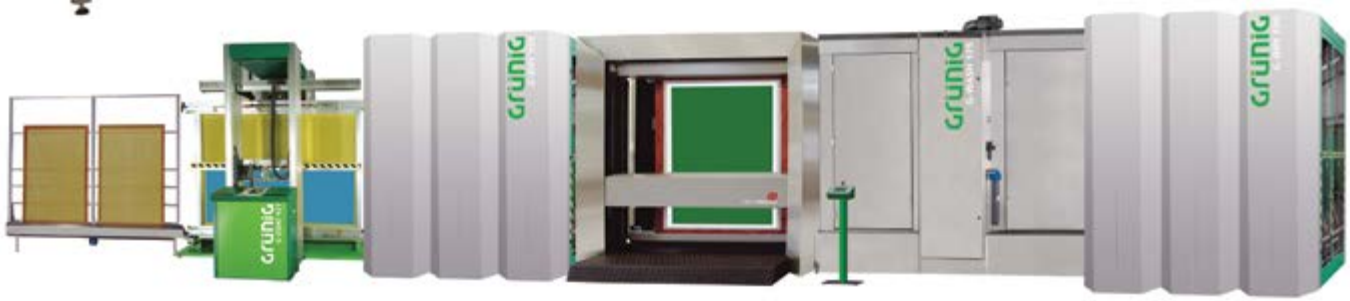
i. Waste

Fewer rejected screens.
Less printing waste.

The StencilMaster STM-TEX offers in-line operation, with loading station, direct exposing, developing module, preliminary drying and unloading station



Computer-to-screen (CtS) with in-line automation v conventional screen-making



Overall, the combination of in-line and CtS lowers the costs per screen

In-line/CtS installations with direct exposure are where the future lies for professional screen preparation

Integration of the G-Wash 175 XS and STM-TEX as a complete CtS and developing line

Fewer consumables such as tape, filler, chemistry, solvent, water etc.

ii. **Lead times**

Much faster production time of the same screen quality, again and again.

Very short reaction time after getting new orders or when repeating similar jobs.

Higher flexibility to follow customer needs.

iii. **Machine set-up**

Because of much better screen and image registration, the set-up time for each screen is much shorter.

The big benefits are:

- Better printing results
- More output by using the same printing machines and operators

Q: What has been done to enable Grünig and SignTronic equipment to work seamlessly together?

A: SignTronic and Grünig developed the in-line concept of the STM-TEX together. Two companies – one concept – the same vision: in-line automation to produce 'the perfect screen'.

We have also developed a modular machine concept based on the StencilMaster STM and the G-Wash 175 to offer different sizes and variations according to customer needs.

It was important to develop the hardware and software parts together to get a perfect hand-shake. The in-line concept we offer is modular and it is possible to upgrade step-by-step.

Q: Which sectors or types of products lend themselves to having frames made on an automated line? For example, flexible circuits, signs, decals, and textile pieces and transfers. This type of system is also invaluable for the production of automobile instrumentation, membrane switches, dials, panels, nameplates, labels and conductive pastes.

A: SignTronic and Grünig are present in all main market segments for screen-printing applications – industrial, graphic and textile.

We see a general trend in all market segments to use much better screens, and it is important to reduce the costs/screen. CtS process – we call it digital screen-making – is the future technology for being competitive in screen-printing, combined with automation and standardisation. The main questions for such a solution and investment are:

- Screen sizes (the maximum size we handle is 4.8 x 12m)
- Screen volume
- Quality required (resolution 1270dpi or 2400dpi)
- Costs per screen today (based on many parameters)
- Flexibility, short delivery time
- Needed flexibility, short reaction time

Q: How big does my business have to be to justify the cost of an automated and integrated line? Please give some examples of the savings other companies have achieved, the returns one might expect, and the pay-back period.

Continued over

A: The first and most important step is to know the actual costs per screen – many companies don't know the real expenditure to produce them.

We see also many small companies (with as few as only six employees) investing in such technology. The reason is clear: to automate and standardise screen production and free up more time for printing, quality, flexibility and sales/promotion.

Q: Competitive equipment is available in the market place manufactured by highly reputable companies at significantly lower prices. It is recognised that the Swiss Franc is strong but – c'est la vie – Swiss companies are super-efficient. Why would my company buy the Swiss product in preference to a cheaper alternative?

A: It is correct our Swiss made products are not the cheapest on the market. The relevant question is what you really get in a long-term view.

One reason is certainly the very strong Swiss Franc, with no influence from our side. A more important reason for our price level is the way we develop and produce our products to a very high standard. Particularly for high quality CtS direct exposure technology from SignTronic, it is important to use the best material, optics, motors, sensors, heavy and stable construction and precision to get the quality and consistency the customer needs.

We see our machines as a long-term investment resulting in many years of use with the same quality and results. One important point is the service we offer for spare parts, customer service, hot-line etc.

What determines cheap? Very often, customers that invest more on their equipment actually enjoy the lowest production costs and best overall returns.

Q: What help can I expect in solving on-site production problems using the equipment?

A: Screen-printing is based on many different parameters. One key tool is the screen. Using CtS direct exposure technology results in far fewer of the many steps and parameters; there is no film, no mounting, less tape, less re-touch, better registration, no vacuum, less handling, less energy, and fewer dust problems etc. The more processes customers standardise and automate, then the greater consistency they get with fewer changing parameters and a better overview.

Q: What service facility is offered?

i. How long is the wait for an emergency call out?

A: Both companies offer a hot-line with 24-hour service to support customers. Most machines, and specifically the Stencil Master and in-line units, are connected for remote service.

It is very important to keep all spare parts in stock. By using global express services we can support most customers within a 24-hour period.

ii. What are the warranty terms?

A: Between six and 24 months, based on specific agreements with customers.

iii. What is the cost of routine servicing for emergencies?

A: Because we are talking about different processes, it is very difficult to show exact costs. We offer service contracts on many different levels. Based on these levels and costs, the customer can select the preferred service contract.

It is important to calculate running and service/maintenance costs for every process/machine.

Q: How upgradeable is the equipment as new developments occur?

A: First of all, it is important to offer modular concepts. If customers invest in new technology and in-line automation it is also important to offer a concept with the possibility of growing according to customer needs – for example upgrade magazines, extra modules or stations, and extra options.

It is also important to develop the machines with the possibility of upgrading the key parts.

This example is based on the SignTronic Stencil Master. The heart of the CtS process is the OECU (Optical Engine Controller unit). We

developed a concept based on three main parts:

- Light source: We use a 330W UV UHP lamp with a great power and wide wavelength (350-420 nm). It is possible to upgrade just the light source part if we see a need.
- DMD (Digital Micromirror Device): It is possible to upgrade the type of DMD if we see a need.
- Optics: It is possible to upgrade or change just the optics if it is necessary (different resolution).

Q: What is the company policy regarding part exchanging older equipment for the latest models?

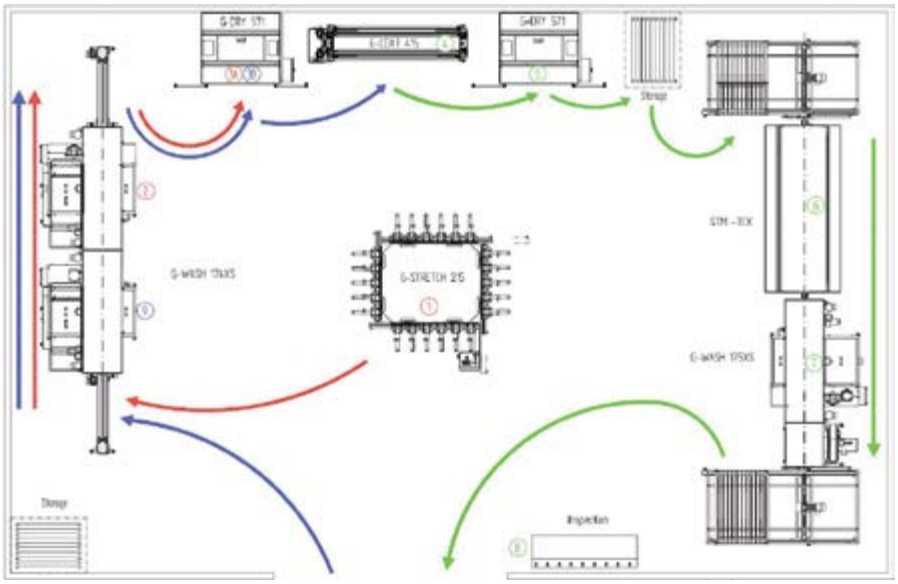
A: Because we produce high quality equipment, we see the machines running in the market for many years. We see a big need for refurbished units as offering good solutions for more attractive prices if the offer fulfils the customer request.

As a result of this situation we offer trade-in for older units at good and fair prices.

Q: Do you provide any form of financing to help with purchasing in this difficult financial market?

A: We don't offer special financing services to customers. Most work with their banks or leasing companies to get the best offer. If customers ask, we can help them to find the correct partners. Case by case, we offer special payment terms to our customers. ■

Andreas Ferndriger is sales and markerting director for SignTronic and Grünig



A perfect screen-printing operation set up for automatic production

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See Grünig and SignTronic at FESPA 2013 stand B12N

The conference presented solutions for ink-jet printing and potential industrial solutions

ADVANCES IN FUNCTION AND INDUSTRIAL PRINTING BROUGHT TO THE FORE AT AFIP 2013

New concepts trigger market demands

In 2008, ESMA started with the European Membrane Switch Symposium which was a single day conference and showed the immediate interest in technical printing applications. Three years later, the concept was expanded with functional printing and became a two-day conference. The programme set a high standard for technical presentations on different applications. The recent event on 6 and 7 March was further expanded with industrial printing and showed even more how this new concept was triggering current market demands. The results of the success can be seen on the website at www.AFIP2013.org

Advanced Functional and Industrial Printing provides a wide variety of printed applications using screen- or digital printing. Typical subjects were conductive tracks, IMD/FIM (In Mould Decoration/Film in Mould), PSA (pressure-sensitive adhesives) and also the potential applications in different market segments for automotive, consumer goods and packaging. This included advanced printing solution of the decorative masks for smartphones and tablets and also the high demands and requirements for these type of applications.

The conference also presented solutions for ink-jet printing and potential industrial solutions plus the need for different printing equipment and requirements for fitting the work-flow into an industrial production process. There were the latest capabilities for screen-printing showing printing solutions of 30 microns with special mesh solutions and advanced CtS (computer-to-screen) solutions for fitting the new required standards.

New conductive polymers and inks are pushing market needs and bringing solutions for all kind of printing processes. The CLIP (Conductive Low-cost Ink Project) showed the potential of copper-based inks for all kinds of different solutions from sensors, antennas, RFID and EL using ink-jet, AJP and screen-printing. The need of good sintering (post-treatment of conductive tracks to improve conductivity) is a critical issue and is already receiving attention.

Industrial printing is currently getting a lot of attention because of the need for further innovations, the search for new printing applications and more lucrative niche markets. Screen-printing has developed many different solutions which found a use in the industrial environment as adaptive disruptive technology. Today, some applications are already possible with digital ink-jet printing but the conference has shown that both printing technologies will continue to exist next to each other or even support one another in new production solutions.

Organised by ESMA, and supported by key industry bodies such as Fespa and PEPSO, AFIP 2013 offered 20 presentations from industry experts and keynote speakers covering applications such as automotive, film insert moulding, nameplate, fascia, printed electronics, circuit, label and solar cell technologies. Presented in dual English/German language, papers included:

- *Conductive polymer and metallic new inks for functional printing – Agfa*

ATTENDEE FEEDBACK INDICATED THAT:

97% said the standard of the conference programme was 'good to very good'.
93% said the conference presentations and meetings in the table-top exhibition area would be useful to their business.
A selection of comments from attendees includes:
"Excellent conference which provides useful information"
"Very informative presentations over a broad range of industry trends, combined with excellent networking possibilities"
"AFIP is an excellent platform for contacts"
"The conference programme was really interesting"
"A very well organised and attended conference"

Regular intervals were assigned so that delegates could spend time with the table-top exhibitors

- *Conductive inks – Conductive Compounds/PrintColor*
- *Revolution in Component Decoration: Direct-to-Product Inkjet Printing is Now a Reality – Cyan Tec*
- *Inkjet for Industrial applications; scope and limitations – Durst*
- *Inks for touch panel decoration – Encres Dubuit*
- *Functional printing using screen or digital printing – HDM Stuttgart*
- *Clevios conductive polymers for printed electronic applications – Heraeus*
- *Computer to screen latest generation: much more than replacing films – G4 Automation*
- *Sintering and applications of copper conductive inks – Intrinsiq*
- *Functional pressure sensitive adhesives – KIWO, Kissel + Wolf*
- *Material developments in film insert moulding (FIM / IMD) – MacDermid Autotype*
- *Printing and high-pressure-forming with UV-curable inks for the IMD process – Marabu and Niebling*
- *Printed Electronics Products and Solutions – PEPSO*
- *Printed EL circuits and antennas – PEL and ACREO*
- *Dual-cure lacquers as protective coating for film insert moulding applications – Pröll*
- *Screen-printing mesh for industrial precision fundamentals for success – Sefar*
- *Computer to screen technology: the future in screen production – SignTronic*
- *Printed humidity sensor circuit with ink-jet and aerosol jet printing – Sirris and KTH*
- *Volume printing of multilayer products – Swansea University*
- *Photonic sintering of printed conductive structures for OLED and OPV applications – TNO Holst*
- *High speed flat-bed violet and UV imaging technologies, and its applications – Xeikon*

Once again, Sun Chemical's Robin McMillan moderated the conference in his role as ESMA's Chairman of the TEC (Technical Exchange Committee). He comments: "It was an honour to moderate AFIP2013 again. This conference features topics at the leading edge of industrial and functional printing and remains unique in addressing these rapidly growing business sectors".

ACCOMPANYING EXHIBITION

The conference programme was supported by regular intervals dedicated to the accompanying table-top exhibition. Leading manufacturers of machinery and consumables participated, including Agfa, Asada Mesh, CLIP (Conductive Low-cost Ink Project)/Intrinsiq/PEL, Durst, Encres Dubuit, FESPA, Fimor, G4 Automation, Grünig-Interscreen, Heraeus, Dr Hönle, Hy.tech Forming Systems, IdtechEx, KIWO/Kissel + Wolf, MacDermid Autotype, Marabu, MP+L Produktions, Natgraph, Nor-Cote, PEPSO (Printed Electronics Products and Solutions), Printcolor, Pröll, Saati, SEFAR, SignTronic, Specialist Printing Worldwide, SPS Technoscreen, Sun Chemical and Xeikon.

THE ORGANISERS

AFIP 2013 was organised by ESMA, an association of European manufacturers of machinery and consumables for the specialist printing industry, in co-operation with Chameleon Business Media, publishers of Specialist Printing Worldwide and Glass Worldwide magazines.

Following highly positive feedback from AFIP 2013, ESMA already has early plans for AFIP to return in 2015. To be staged in Düsseldorf in November 2013, ESMA and Chameleon will also co-operate again to stage the fifth edition of GlassPrint – Europe's only conference and exhibition for the decoration of all types of glass (see pages 2-3). ■

Further information:
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email: info@esma.com
web: www.AFIP2013.org

See ESMA at FESPA 2013 stand C28N

CONFERENCE PROGRAMME REVEALED FOR BALI LABEL SUMMIT

Insight into South East Asian market includes latest technologies and business practices

The conference programme has been revealed as registration opens for the inaugural Label Summit Indonesia which is being held at the Westin Resort Nusa Dua in Bali between 29 and 30 May. Focusing on the label and packaging printing industry, the summit will comprise a mix of technical presentations, real life business case studies and the latest industry insight and business intelligence into market trends, conditions and challenges.

The summit commences with a round-up of market trends with presentations by Multi-Color Corporation's Brenton Barrett who will look at global trends and Ariana Susanti of the Indonesian Packaging Federation who will explore the latest developments in South East Asia. In a printer panel discussion, converters from Indonesia, Thailand, Singapore, Malaysia and the Philippines will look at printing as part of the economy and future growth opportunities.

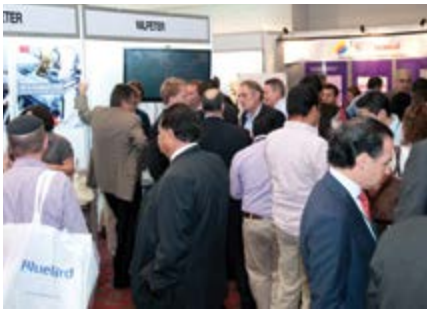
The afternoon's sessions will address the latest available technologies, capabilities and applications. The keynote being delivered by HP Indigo's Christian Menegon will focus on making the move from a conventional to digital work-flow and examine how the converter needs to adapt to cater for short run jobs. Other topics include creating value with 3D technologies and a guide to flexo technology, materials and performance.

Day two's content has been developed to help identify new opportunities for business growth. Sri Yulianti, research and development packaging manager – home personal care from Unilever – will consider how to implement a sustainable strategy for environmentally friendly packaging practices. Supa Stik Label's Pete Holywell will share secrets on how to transform your business using on-line marketing and social media platforms, while other subjects include effective anti-counterfeiting solutions for brand protection.

Aimed at label and package printing converters, brand owners and designers, the summit is complemented by a table-top exhibition with participants including Esko, Flint Group, Gallus, Mark Andy, Nilpeter, Omet, RotoMetrics and Stork Prints. In addition delegates will also enjoy an evening reception and afternoon networking function.

Jade Grace, event director comments: "Label Summit Indonesia is designed to provide an insight into the South East Asian market-place and focus on learning and developing best practice from the latest available technologies and trends. Delegates will find out how to maximise business growth opportunities and also how emerging technologies such as digital offer them new possibilities today, not just in the future."

She concludes: "The consumption of labels and packaging in the region is set to



Converters and printers are key delegates at Label Summit Indonesia

escalate because lifestyle habits are changing. As already seen in other emerging markets such as China and India, this Westernised lifestyle quickly drives change across the supply chain and manufacturing process. The label and packaging printing industry here is in its infancy, but advances in using more sophisticated technologies, materials and marketing techniques will be fast-tracked to keep up with demand. For those fortunate enough to be involved in this cycle, the commercial opportunities and benefits are immense as the Indonesia market matures." ■

Further information:
web: www.labelsummit.com

FESPA BRASIL SMASHES VISITOR TARGET

First ever event in Sao Paulo hailed an exceptional launch

Fespa Brasil welcomed 13,184 visitors through the doors of Expo Center Norte in Sao Paulo from 13 to 16 March, stating that the inaugural show exceeded expected unique visitor figures with senior decision makers making up 50% of the total visitor attendance. The success of the show (co-located with ExpoPrint Digital) is underlined by the extent of exhibitor re-bookings, with more than 40 companies, including leading international manufacturers, having already reserved stand space for Fespa Brasil in 2015 allocating 70% of the existing floor plan.

Exhibitors around the show were enthusiastic about Fespa's first Brazilian event. Global Technology Partner, Xaar, was thrilled about the event with Edsel Lonza, Sales Manager, Latin America, commenting: "Fespa Brasil attracted serious buyers and senior decision makers interested in the latest digital wide-format developments. It provided a perfect forum to host the Xaar-sponsored 'New Business Opportunities in Digital Printing' seminar, attracting more than 100 delegates keen to learn all about ink-jet."

Evelin Wanke, Product Manager, Epson Brazil states: "Fespa Brasil was very busy as soon as the doors opened. It is not unusual for the first day of an exhibition to be slow and gradually increase in visitor numbers throughout the duration of the show; however the visitor attendance has been great."

Fespa Managing Director, Neil Felton, comments: "Fespa Brasil has been an exceptional launch, surpassing all our

expectations in terms of visitor numbers for a launch show. The feedback we're receiving from exhibitors in terms of stand sales and business leads has been incredible. The show kicked off a spectacular showcase of print and provides us with clear evidence that Fespa can expand into new geographical markets already served by established events and, with a unique content-led approach, deliver something that adds value and attracts visitors in high numbers and calibre."

Working in partnership with APS Feiras & Eventos, Fespa Brasil was strongly supported by the Brazilian screen-printing, digital wide-format and textile printing community. The Fespa features and quality content created specifically for this audience proved extremely popular, particularly the international congress which offered visitors a range of technical sessions, creative ideas and business solutions.

Ricardo Vieira Pi Martin, Commercial Manager of Océ, says: "We presented in the International Congress at Fespa Brasil as well as exhibiting at the show. Through these we have reached a targeted, high calibre audience of decision makers interested in buying equipment. The quality of visitors is essential to the success of any show and Fespa Brasil exceeded all our expectations."

Other highlights at the show included demonstrations from Charlie Taublieb who was inundated with more than 450 visitors. He showcased practical garment decoration techniques including screen-printing, spraying effects and adding embellishments.

Fespa's high octane vehicle wrapping competition, Wrap Cup Masters Series, sponsored by 3M, was characteristically the crowd magnet. The Brazilian winner Jefferson Pimenta from company Pimenta's Adesivos, will now be preparing to head to London for Fespa 2013 in June this year to compete with his counterparts from Europe, the US and Mexico for the chance to be crowned global champion. The area was also transformed into a learning zone on the final day of the show; highlights included presentations and practical demonstrations of best practice vehicle graphic installations.

Fujifilm's Application Village, based on a children's library, was a celebration of innovative visual and decorative print application. Built completely from Hexacomb substrate inclusive of floor, walls, furniture and toy car – in addition to supporting a digital screen – the library highlighted the possibilities available with print when used creatively. The area has now been donated to Livroteca Brincante do Pina, a local charity that works with underprivileged children.

Felton continues: "Our ambition for the inaugural Fespa Brasil, as with all Fespa international shows, was to inspire printers by presenting them with creative ideas, opportunities, latest global trends and practical tools to help build their businesses. Testament to the success of our first show has been the fact that the majority of exhibitors signed up for Fespa Brasil 2015 before they packed up their stands on the final day. We look forward to planning the next show in March 2015, building on our launch success and going beyond the market's expectations from Fespa in 2015." ■

Fespa Brasil proved to be an unprecedented success

Further information:
Fespa, Reigate, Surrey, UK
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email: info@fespa.com
web: www.fespa.com

ON TRACK TO BE A TRULY INTERNATIONAL EVENT

New products and Destination London are key elements to this year's Fespa

Visitor pre-registration for Fespa 2013, which takes place from 25 to 29 June, is up 8% compared with the same period leading up to Fespa 2010 in Munich. Visitors from more than 123 countries have already pre-registered to the show, all set to start their business journey at the ExCeL, London. The top 20 pre-registered visitor countries cover Europe, North America, Africa, India and Australia.

So far, the UK has the highest number of visitors pre-registered to the show, with Germany, Italy, Spain and France following in close succession. With just under three months still to go until the show doors open on 25 June 2013, the show is set to be the most international Fespa yet.

This year more than 100 exhibitors have announced a New Wings product launch or a product being shown for the first time at Fespa 2013, indicating that the show is this year's platform of choice for new product innovation, particularly for companies targeting an international audience of key decision makers.

Neil Felton, Managing Director of Fespa, comments: "Fespa moves to different locations in Europe with each show. As a result, the audience is constantly being refreshed, introducing new dynamics to the event every year. At Fespa Digital 2012 in Barcelona, for example, almost half the visitor audience came from the Iberian peninsula, so we learned a lot about the particular business drivers in those markets, and grew our community in these countries. With the move to London for the flagship Fespa 2013 event, while still of interest to our usual international visitor audience, we are attracting more printers, agencies and brand owners from the UK and Ireland. London also appeals to printers from the Americas, Australia and Asia, who see it as a compelling business destination."

Fespa 2013 expects to attract more printers, agencies and brand owners from the UK and Ireland

DESTINATION LONDON

Fespa has created a whole host of show features to guide visitors around the show designed to provide valuable educational content and hands-on features, showcasing innovative real-life examples of print. Bringing to life the central Destination London campaign theme, visitors will start their business journey at the North hall N1 entrance. FESPA 'airline stewards' will be on hand to help guide visitors around the exhibition floor exploring the many possibilities of print.

Set to land in London for the first time, the Jet Set conference will be held on the show floor on stand B75N. For the duration of the show, seminars will address key areas of opportunity for today's PSP, including topics on digital textile, digital printing, business building skills and industrial printing. Speakers already confirmed include Paul Noble of Banner Box, Nick Del Verme from Advanced Digital Textiles, Nick Devine – The Print Coach, Icon-world's Andrew Hodson , Chris Martin of Syntax121 and NooPix Ltd, Melanie Bowles from Chelsea College of Art and Tim Claypole of WCPC, Swansea University.

THE TRAVELLING THEME

Duncan MacOwan, head of events and new media at Fespa comments: "Our show features at London emulate the destination theme and highlight the effectiveness of print and its innovative applications. Fespa's content-led approach is designed to inspire printers by presenting them with creative ideas and opportunities enabling them to explore wider business opportunities.

"In today's multi-channel world the relationship between PSPs, designers and marketers is essential to achieve the highest quality, innovation and ROI possible. That's why at this year's event with features like the Creative Corner and Print Inspiration Runway, we're also targeting creatives and brand owners, showing them the possibilities that can be achieved through print and providing real life case studies of how PSPs and agencies can work better together. Through our educational content and hands on practical sessions we want to continue to inspire and inform printers to give them the confidence to communicate the value of print. Fespa 2013 in London really is the destination to kick off the printer's business journey." ■

Further information:
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- FIMOR – C18N – www.fimor.fr
- GlassPrint 2013 / Glass Worldwide – C28N – www.glassprint.org
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NATIONAL TRADE SHOW HEADS NORTH

New Delhi to host successful Indian exhibition

Having successfully run Screen Print India as a highly focused industry platform for two decades in Mumbai, the organisers have now made the decision to hold the event in New Delhi at the NSIC Exhibition Complex, Okhla. The exhibition will take place from 19 to 22 September this year. This decision has been reached in response to overwhelming demand and, once again, the show will be supported by the Screenprinting and Graphics Association of India (SGAI).

Focusing on screen-printing, textile and digital printing materials and equipment, the show has been providing an ideal platform to connect with every segment of the industry and explore new business prospects. The Screen Print India exhibition has taken place every two years since its debut in 1994 and is considered to be one of Asia's most respected events of its type.

The exhibitor profile at Screen Print India 2013 will encompass technology drivers, manufacturers, distributors, dealers, service providers and the education sector, all contributing to any process of screen-printing, textile printing and digital printing. Visitor profiles will comprise leading industrial screen-printers, technicians, consultants, professionals, entrepreneurs, product and service providers, plus end-users who are employing screen-, textile and digital printing as a substantial part of their process. ■

Screen Print India has taken place every two years since its debut in 1994

Further information:
web: www.screenprintindia.com

NEW CHAIRMAN AND COMMITTEE STRUCTURE

Introductory speech looks at the association's vision for the future

During the general assembly in Marseille on the 22 March, ESMA welcomed the newly elected Chairman, Jon Bultemeyer of Marabu, into the leading role. In his introduction speech, Jon provided a glance at the vision the association plans to implement over the coming years. Describing these goals briefly we can say that it is ESMA's aim to expand the role of experts in technical exchange dedicating ourselves, in particular, to industrial applications for both screen- and digital printing.

Furthermore ESMA is striving to enhance print standards as well as awareness for specialist printing by offering know-how exchanges in new application areas while fine-tuning this approach through a vertical reach by integrating printers into targeted events and membership. ESMA recognises the need for providing the industry with clearly formulated definitions and is ready to lead by creating them. Jon states himself: "Industrial Printing is a term covering a broad range of applications and interest groups. ESMA has set the goal to develop a concrete understanding of what is meant with such a broad term. We believe a unified definition will help formalise a community in which awareness of current processes can be maximised while setting the stage to develop future orientated solutions – an effective forum for communicating needs and offerings."

At the same time, Bultemeyer revealed the new committee structure, refined to address and integrate the needs of both screen and digital members, to expand networking opportunities, and to create a focus on quickly addressing current hot topics. ESMA has the unique position of connecting, in particular, the industrial world with the printing process. In contrast to the graphic print world, this market continues to evolve and expand as new applications appear, and our members' many years of experience in these areas provide us the chance to offer this community a communication centre of know-how exchange. The new committee structure was designed to achieve these goals more precisely.

Jon Bultemeyer, ESMA's new Chairman, addresses the audience at AFIP 2013

What is on the horizon? Having just finished a successful AFIP 2013 (Advanced Functional and Industrial Printing), this year we are once again hosting our crown jewel, GlassPrint 2013, with co-organisers Chameleon Business Media in November (see pages 2-3). For 2014 we already have made the initial steps for PID (Printed Interior Decoration), a new conference handling new trends in the use of print for internal decoration purposes.

ESMA's Regulatory Affairs Seminar, a free of charge seminar in Paris on 19 April was another example of effective know-how exchange on current topics providing attendees with a clear overview of recent regulations and steps to conform. This seminar was organised to coincide with the 50th meeting of the Health, Safety & Environmental Protection (HSEP) Committee and simultaneously launched a new ESMA work group focusing on sustainability matters. ■


Robin McMillan, Chairman of ESMA's TEC (Technical Exchange Committee) looks on as CEO Peter Buttiens opens AFIP 2013

ESMA
Driving Print Excellence

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See ESMA at FESPA 2013 stand C28N

BRINGING CLARITY TO A COMPETITIVE MARKETPLACE

Michael E Robertson stresses the importance of minimising confusion for graphics producers and their customers

Michael Robertson

SGIA is an association of imagers with shared market interests and capabilities. The largest group within SGIA consists of wide-format graphics producers using digital imaging technologies. They have a healthy competition with each other, as well as with other companies in the speciality printing community. Competition within the community is certainly an important consideration as graphic producers define their value proposition. But, looking at the bigger picture, there is another challenge on the horizon.

Leading graphics producers are working hard to differentiate themselves from the traditional printing industry. Competition from outside the speciality imaging community is on the rise. Easy implementation of technology and the need for revenue are pushing traditional printing companies toward markets typically served by speciality imagers.

I recently discussed competition with several leading graphics producers in the SGIA membership. These companies use digital imaging as their primary imaging technology. Their comments were eye-opening for me and I came away from these discussions with a better understanding of the marketplace.

KEY VALUE POINTS

None of the graphics producers using digital imaging as their primary technology said that print capability was a main competition point within the community. Being able to meet their customers' imaging needs was a requirement in today's marketplace. However, some said that the use of multiple imaging technologies, or advanced technology management, allowed them to improve their price point. While imaging is certainly critical to their success, these graphics producers compete more on the other services and support they can provide the customer. For some, it was consistency and credibility; for others it was project management, including fulfilment. Still others said that providing creative services was the key value point on which they compete.

PRICE, QUALITY AND MEETING EXPECTATIONS

Almost all expressed concern that confusion in the marketplace would continue to be a problem as companies enter the market without the right skill set and experience. One graphic imager said: "If I have to compete, let me at least compete against companies that fully understand the task at hand." Several had stories of customers coming back to them after finding that a new vendor's low price didn't return the expected results.

Reverse auctions exacerbate the problem. While most of the people I talked with avoid reverse auctions, they can't escape them entirely. Several commented on dropping out of reverse auctions after the price went below cost.

It's important to note that not all companies new to the speciality imaging community are problematic. There are many new to the community that are competing effectively and making a positive contribution. In fact, unlike other print sectors, the speciality imaging community is growing and profitable.

However, the ability to enter a profitable market with technology that is almost 'plug and play' will continue to create confusion. Our best approach to minimising this confusion is education for both the graphics producers and customers. Communication with customers and developing strong business relationships are critical to success. Cut through the confusion with a clear, accurate value proposition. ■

Michael E Robertson is President and CEO of Specialty Graphic Imaging Association (SGIA)

Specialty Graphic Imaging Association

Further information:
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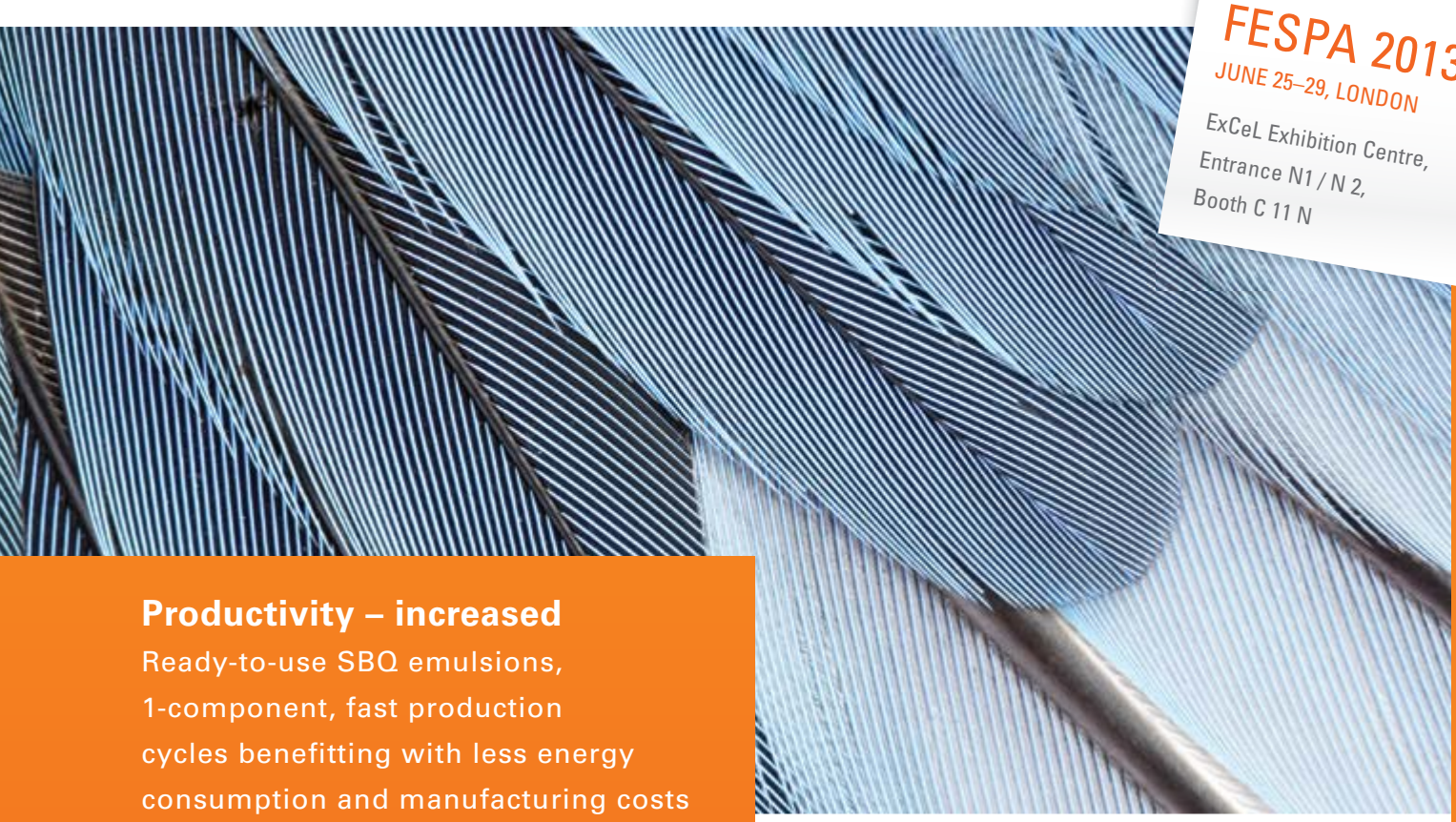

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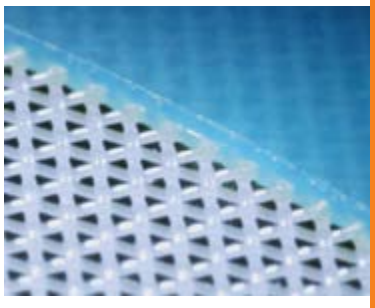

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